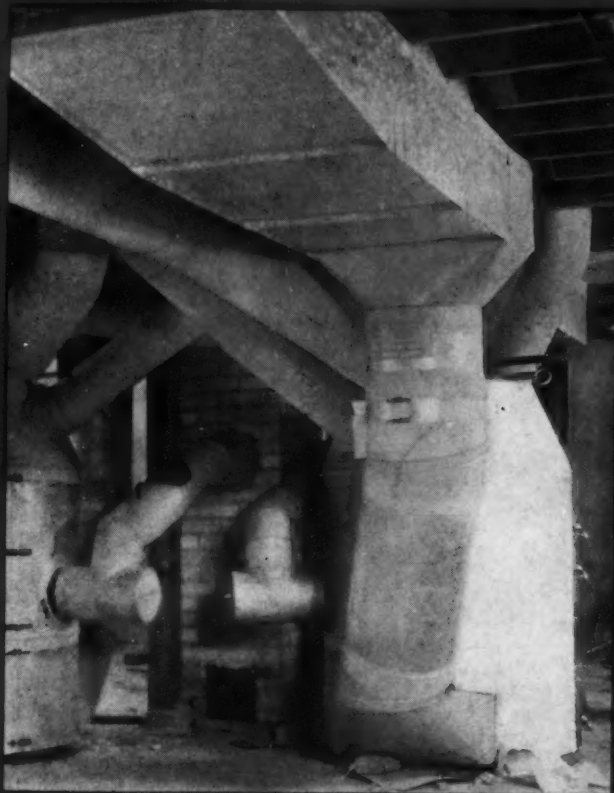


# AMERICAN ARTISAN

FEBRUARY  
1943



RESIDENTIAL AIR CONDITIONING  
FARM AIR HEATING • SHEET METAL CONTRACTING

ESTABLISHED  
1880



# **LAMNECK PRODUCTS**

have  
**Gone to War.**

***We are making airplane parts  
and parts assemblies***

We feel we deserve no particular commendation; we are only doing our job as we see it to speed the day for a sound, thorough, and complete Victory. In the meantime please do not forget us. We are folks that will be around after awhile asking you to again buy the best we can produce of Lamneck Furnace Pipe, Duct, and Fittings.

**LAMNECK PRODUCTS INC.**

**For the duration we are making airplane parts  
and parts assemblies**

***Middletown, Ohio***



# HELPFUL INFORMATION FOR USERS OF CRESCENT TOOLS



● Crescent's informative series entitled "TOOL NOTES" has been reprinted and is now available in portfolio form. The set consists of 8 sheets, 8½ x 11", punched for standard 3-ring binder and stapled between serviceable covers.

Subjects covered are as indicated by the 8 sheets illustrated on this page. Copies will be furnished gratis to users and purchasers of Crescent Tools, and in limited quantities to trade and vocational schools, both civilian and military. For classroom and bulletin board use, individual sheets can be supplied less covers.

To obtain these reprints, write us direct, stating whether those we send you should be in portfolio or loose sheet form.



## CRESCENT TOOLS

*Give Wings to Work*

CRESCENT TOOL CO., JAMESTOWN, NEW YORK

# AMERICAN ARTISAN

Covering All Activities in Residential Air Conditioning and Small Commercial Cooling, Warm Air Heating, Sheet Metal Contracting and Fabricating

WITH WHICH ARE MERGED

FURNACES  
SHEET METALS

AND

Warm-Air  
Heating

J. D. Wilder, Editor

A. A. Kennedy, Assistant Editor

Vol. 112, No. 2

February, 1943

Founded 1880

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**A**S the winter marches on, the problem of keeping fuel oil users comfortable gets no easier. Users are burning oil ahead of their coupon schedule. They're borrowing against the future and in the last period may not have a coupon or a gallon of oil. Users still are not adopting all the "little things" which mean oil saving.

It seems, then, that heating men are going to have a period in March and April when oil users will have to scratch to keep heat. And next summer these same users will have to decide whether to convert or to buy insulation, storm sash, weather-stripping and anything else available in order to stretch next winter's oil.

We have been trying, since oil rationing went into effect, to show month by month the things you, as a heating contractor, can tell your customers about fuel savings.

In this issue there are four short articles which we hope you will find handy and usable. See pages 32 to 38.



The two latest orders to worry readers—Maximum Price Regulation No. 251 and the Victory Tax—are discussed in this issue.

MPR 251 establishes the prices you may charge for the work you do. There's no definite form for reporting jobs above \$500 to OPA or to the customer, but there is a form of letter which is acceptable and certain information you must show. Page 20 shows the letter and the form.

The Victory Tax is, of course, already under way. We hope your bookkeeping system can take the new entries, but if you are still thinking about how to put the tax through your books, the article on page 26 will be useful.

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# *Keeping on the Beam*



***Save or Slave—  
Buy War Bonds***



**S**OME day the war will be over and the pent up demand for heating equipment will be loosed in a flood. Nobody today knows with any certainty just what type of heating equipment will then be required to meet the surging demand. As far as design goes we may resume about where we left off before the war or some radically different types of equipment may have to be developed to meet tomorrow's changed conceptions of heating service.

RYBOLT engineers are closely

studying heating trends as they may be affected by factors of new building design, new applications of materials and fuels or changed consumers' reactions. At the same time RYBOLT is keeping on the beam of approved heating principles, with its clear signals of sound common sense and level-headed planning.

By holding this course, as we have for a quarter of a century without deviation, we hope to retain your confidence in our ability to serve you after the war.

**THE RYBOLT HEATER COMPANY**  
615 MILLER STREET                      ★                      ASHLAND, OHIO



# AEROFIN

## Heat-Exchange Surface

chosen for  
U.S. Submarines

Photo by Ewing Galloway, N. Y.

## AEROFIN WINS IN DANGEROUS SERVICE WHERE LIVES DEPEND ON COMPLETE RELIABILITY OF HEATING AND COOLING

When men go down to the bottom of the sea, lives depend upon the precise functioning of every piece of vital equipment. In the United States Navy's submarine service, heating or cooling the under-water craft—quickly and efficiently, with equipment occupying the least possible space—is of paramount importance.

That is why Aerofin Standardized Light Weight Heat-Exchange Surface was chosen for the Government's new super submarines. Not only did Aerofin meet the rigid specifications of the naval architects and

engineers, but its proven reliability under exacting conditions was an important factor in its selection for this dangerous naval service.

You, too, can rely on Aerofin for the simplest or most complex heating or cooling problem. More than fifteen years of practical engineering research is behind the manufacture of Aerofin surface.

Take a leaf from the experience of thousands who have specified Aerofin with lasting satisfaction. Write to our home office or ask any of the district offices below for complete technical literature.

### AEROFIN CORPORATION

410 SOUTH GEDDES STREET  
SYRACUSE, N. Y.

Chicago · Detroit · New York · Philadelphia · Dallas · Atlanta

**AEROFIN**  
is sold only by  
Manufacturers  
of Nationally  
Advertised  
Fan System  
Apparatus.

List upon Request

# FACTS! TO HELP YOU USE STEEL TO BEST ADVANTAGE...

**S**HARING what we know about materials and methods is one sure way of making America's collective war effort hard-hitting. Every day the free flow of working information is helping to keep snarls out of production lines and shop schedules.

Take sheet steel, for instance. Individually, experienced metal workers know a lot about the characteristics and application of various steels, but no one has *all* the answers. In the millions of man-years

that have gone into the production of U·S·S Steels, we have gradually built up a sizeable reservoir of facts on this key material. These facts are available to you—either in our product literature or by representative contact.

Look over the books illustrated and briefly described above. Will any of this information help to make your wartime work more productive? If it will, send us your request on your business letterhead, and we'll mail the books you need.

**CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago**

**COLUMBIA STEEL COMPANY, San Francisco**

**TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham**

**United States Steel Supply Company, Chicago, Warehouse Distributors**

**United States Steel Export Company, New York**

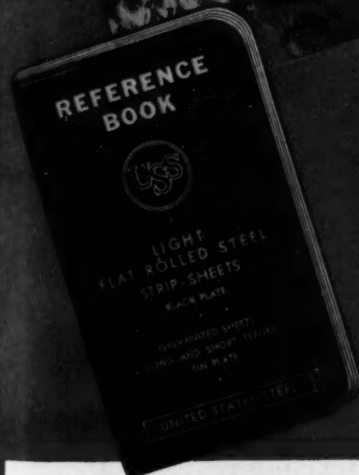
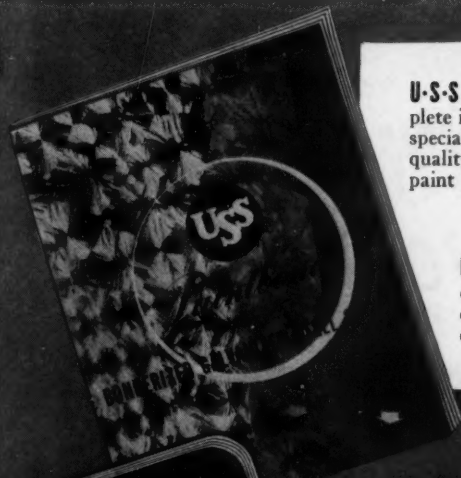


**U·S·S STAINLESS** and Heat-Resisting Steels for Modern Industry. A condensed catalog on stainless steels in the dairy, petroleum, food, textile, aviation and transportation industries. Full information on chemical, physical and mechanical properties, corrosion resistance, and fabricating qualities.



**U·S·S PAINTBOND** Bonderized Galvanized Steel Sheets. Complete information on the characteristics and application of this special galvanized sheet, which is Bonderized to give it the quality of immediate paintability, plus the ability to hold paint longer.

**U·S·S ABRASION-RESISTING STEEL.** Complete essential facts on composition, properties and fabrication. Also a table of applications and full information on punching, drilling, machining, cutting, welding and forming.



**POCKET REFERENCE BOOK** on Light Flat Rolled Steel. This little encyclopedia provides a convenient reference for essential facts and figures you need in your daily use of steel sheets and strip. Contains condensed application information and numerous tables of weights and measures.



**THE FABRICATION** of U·S·S Stainless Steels. A manual of detailed recommendations for successful workmanship in the fabrication of stainless steel. Contains valuable helps on welding, riveting, soldering, joint design, machining, cutting, forming, annealing, pickling, surface finishing and protection.



**GUIDE FOR SHEET METAL** workers. A useful manual of facts to aid application of U·S·S Galvanized, Black, Ternes and Stainless Steel Sheets. Contains valuable fabricating and construction tips, tables of weights and sizes and finishing information. Fully illustrated.

**U·S·S  
STEEL  
SHEETS**



**UNITED STATES STEEL**



# Call Osborn

## FOR SHEET METAL AND ROOFING SUPPLIES

Are you using sheets and sheet metal working tools and machinery for production of defense contracts? Do you require asphalt roofing and supplies for your Spring work? Then, call your nearest OSBORN warehouse for your needs.

Our stocks are more complete today than they have been in some months and the chances are good that we can supply the exact items you want. Equally important, we can give you the prompt service which today's war requirements demand.

Make a note of the phone number of the nearest OSBORN warehouse so that you'll have it when you again want to order materials in a hurry.

THE J. M. & L. A.  
**OSBORN Co**  
CLEVELAND, OHIO  
BUFFALO • CINCINNATI • DETROIT  
*Manufacturers—Distributors of Metals and Metal Products*



STEEL, IRON, STAINLESS,  
ALUMINUM, COPPER  
AND PERFORATED SHEETS

TROUGH, GUTTER AND  
CONDUCTOR PIPE

WARM AIR FURNACES

TOOLS AND MACHINERY

ASBESTOS AND ASPHALT  
ROOFING AND SIDING

A DEPENDABLE SOURCE OF SUPPLY FOR 84 YEARS



**"NO TROUBLE HERE!"**



**"Our work goes FASTER...we do it BETTER  
with Parker-Kalon Sheet Metal Screws"...**

**Says Charles P. Blouin, Inc., Boston**

"For this South Boston Post Office Garage job, we specified Parker-Kalon Sheet Metal Screws," says Mr. Charles P. Blouin. "We find that P-K Screws are tempered to the right hardness; their size is perfectly uniform, and their holding power more dependable than any other screws we've used."

This contractor, like others in the sheet metal field, knows what it means to have *trouble* with screws that won't hold because they're undersize... that go in hard because they're oversize... that spin around because they're not threaded to the head... that break when you draw them up tight. To avoid these time and profit-wasting troubles, they now specify Parker-Kalon Quality-Controlled Sheet Metal Screws... and stake their reputation on them!

P-K Screws work right and stay in tight! "Doubtful Screws"... screws that *look* all right but some of which fail to *work* right... are eliminated by Parker-Kalon's Quality-Control routine. P-K Screws make fastenings that protect your profits and your reputation. Specify them on every job! Parker-Kalon Corporation, 190-192 Varick Street, New York, N. Y.



**TYPES FOR EVERY METAL FASTENING JOB**



Over 25 tons of duct-work went into the South Boston Post Office Garage... installed by Charles P. Blouin, Inc. One of the largest and most modern buildings of its kind in the country, this garage is particularly interesting because its main duct system is designed to heat in winter, and bring in fresh air in summer.

**PARKER-KALON**  
*Quality-Controlled*  
**SHEET METAL SCREWS**

Give the Green Light to War Assemblies



*The Bonds we're Buying  
Keep 'em Flying*



**T**HE boys in the Luxaire plant, one of the home front firing lines, working tirelessly night and day in the production of essential war materials . . . figuring out ways and means to step up each operation to increase production . . . knowing full well that each little job left undone that might have been finished, might be the important part that spells the difference between victory and defeat . . . have also been busy figuring out ways and

means to buy more war bonds and stamps "to keep 'em flying"—and are doing a whale of a good job of it. They know that in these bonds and stamps they're a buying, there just has never been offered any better investment or security in the whole world . . . The investment in an everlasting peace . . . Assured financial security in old age. They know that liberty once lost can't be bought back again.

**BUY MORE WAR BONDS AND STAMPS**

*Luxaire*

**WARM AIR FURNACES  
AIR CONDITIONING UNITS  
COAL . . . GAS . . . OIL**

**THE C. A. OLSEN MANUFACTURING CO., ELYRIA, OHIO**



You wouldn't expect a rope to go through the eye of a needle. Neither will the large amount of air necessary to heat a home pass through the restricted passages of a clogged filter. *It just won't go through.* Clogged filters are wasteful. Clean filters save fuel by allowing the proper quantity of heated air to get into the rooms where it is needed. In view of the present fuel shortage it is imperative that filters be inspected now, and either cleaned or replaced.



When filters need replacing, be sure to ask your local jobber for "Detroit" Air Filters, and take advantage of these desirable features.

**ECONOMY**—Patented cellular design gives more filtering capacity per dollar.

**FREE AIR FLOW**—Uniform air distribution assures free flow with maximum filtering.

**DUST CAPACITY**—Thoroughly impregnated with special non-dripping compound to retain dust collecting ability indefinitely.

**ODORLESS**—Adhesive material is absolutely odorless and will not turn rancid.

**LONG LIFE**—Entire thickness of filter used in cleaning, thus providing long and efficient filtering.

**\*STRENGTH**—Selected materials and sturdy construction prevent sagging. No danger of small particles being carried into air stream.



**POLLEN**—Highly effective in providing relief for persons allergic to air-borne pollen.

**CLEANING**—Guaranteed factory cleaning and renewal service when necessary—a further economy.

**\*No critical materials are used in the construction of Detroit Air Filters.**

Made in all standard sizes—special sizes to order.



**DETROIT LUBRICATOR COMPANY**

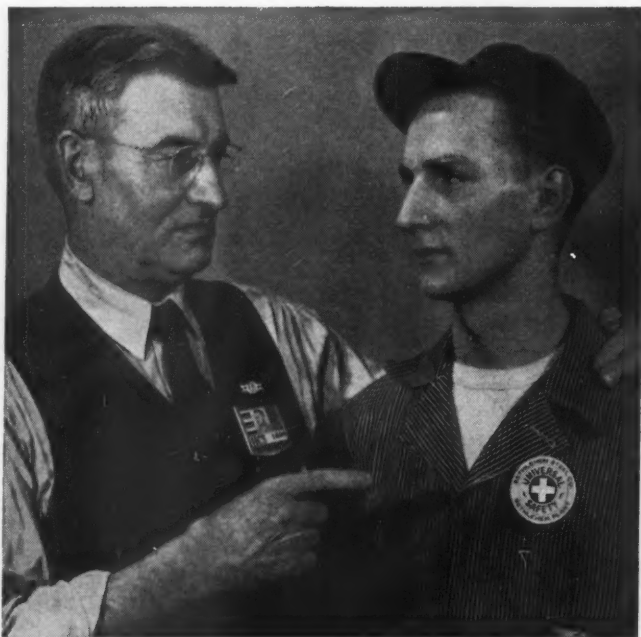
General Offices: DETROIT, MICHIGAN

Canadian Representatives—Railway and Engineering Specialties Limited, Montreal, Toronto, Winnipeg





# SAFE WAYS IN WAR PRODUCTION



**NEW WORKER**—Every new employee in a Bethlehem Plant wears this button. It helps to fix his attention on safety. It signals to more experienced employees that he is new to the plant, and they keep an eye on him, and do not hesitate to offer friendly guidance in case he forgets instructions and unknowingly breaks any safety regulation.

Industrial accidents, bad enough because of the human distress they cause, are also a grievous drag on production. Every day that injury lays up a worker means lowered output of the materials our armed forces are asking for.

Safety engineers know they must be more than ever on guard as pressure for production intensifies and men work against time. When war came, Bethlehem Steel Company expanded its accident-prevention program to meet the new conditions. Special efforts were addressed to the new employee to make him safety-conscious from the moment he walked into the plant. And by posters, group meetings and individual instruction, the safe way of doing his job was ground into the subconscious of new Bethlehem employee and veteran alike.

Significant are the results of a current study, showing that of all disabling accidents to Bethlehem employees less than one-third occur in the course of their work. Even with employment rolls upped by the tens of thousands and plant operations at top speed to meet the demands of the war program, the Bethlehem employee is safest, best protected against injury, during the hours he spends on the job.



**AUTOMATIC HAND GUARD**—This man is operating a trimming press. If he should absent-mindedly let his hands move too near the danger zone, the two cables will automatically whisk them back to safety, before the ram of the press descends.



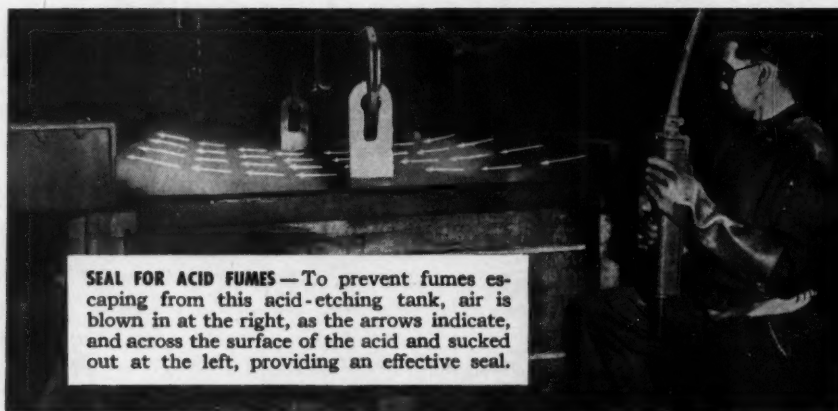
**100% HEAT-INSULATED**—Asbestos-covered hood, chrome-leather full-length apron, chrome-leather gloves, chrome-leather full-length sleeves and asbestos guard on torch handle give this worker complete protection against heat and flying sparks.



**EYES DOUBLY GUARDED**—Even though this grinder is equipped with a heavy glass shield, the eyes of the man who is operating it are given further protection against sparks or flying bits of abrasive by the cup goggles that he is wearing.



*Bethlehem Steel Company is actively supporting the National Safety Council in its campaign against accidents in war production, through the War Production Fund to Conserve Manpower.*



**SEAL FOR ACID FUMES**—To prevent fumes escaping from this acid-etching tank, air is blown in at the right, as the arrows indicate, and across the surface of the acid and sucked out at the left, providing an effective seal.



## This Industry Needs an Expediter

**H**ERE is a suggestion we would like to drop into the lap of every association officer and active member now preparing for our annual conventions.

And also into the lap of every contractor in the industry who wonders why, or asks why, or demands to know why, this sheet metal contracting industry can't put together and successfully operate one truly representative national association of contractors.

One reason why previous organizations fell apart, was because there was no one really big problem everyone could bite into. There were lots of little problems, but they only affected a part of the membership. Labor relations, for example.

Certainly every sheet metal contractor (and this includes the furnace dealer, of course) now has one BIG problem. That's the problem of getting materials—sheets and products.

It makes no difference if you work with the tools or hire 100 men. Whether you use union labor or handy men. Whether you are in a big city or a rural community. Whether you are an all around job shop or specialize in one item.

Our suggestion is based upon Arnold Kruckman's letter in this issue which explains how "material scouts"—expeditors, the war agencies call them—do get materials and clear away all the underbrush of priorities, transportation, lack of personal contact which impede the individual firm's chances to get material.

If this industry had such an expeditor in Washington maybe we could impress on the proper persons the great need for materials to maintain and repair the homes and buildings which must keep our country in the fight.

We hope that every reader will study this month's Washington Letter. We hope that readers won't pass this problem up with the feeling—"it's too complicated to put in operation."

The suggestion is possible of operation. We have reported in our Association Activities section the effort now under way to get state association secretaries together for periodical meetings at which problems which affect every man in the

industry can be discussed and perhaps benefited. We believe that out of such meetings might come the basis for a plan of expediting materials.

For instance, Kruckman reports that after months of fact finding Plumbing and Heating Branch of WPB still has no satisfactory figures on the *actual* number of furnaces required for replacement. Certainly we've given them many sets of figures. If these figures we've presented haven't been actual, the reason must be that our furnace manufacturers don't know and can't know how many furnaces John Jones put in as replacement where repairs were not possible. The only one who really knows that is John Jones. Only if all the John Joneses who are members of local and state associations sit down and furnish honest figures can this industry present a true picture. Associations can do that job.

Only John Jones also knows how many bundles or tons of sheets he used last year on work which definitely assisted in keeping home owners and business men comfortable and protected against the elements. Only as local and state organizations get John Jones to compile his figures and then put all the John Joneses together will such tonnages ever be compiled.

If we can compile such figures through such a plan then, as Kruckman points out, we can count on powerful allies in Washington to help this industry get needed materials. These allies are in the WPB branches which work with our industry. Such allies are also our representatives in Congress who, in the final analysis, are also home owners and elected by vote and so are willing and anxious to keep the civilian economy going.

To prove our industry is essential we need these figures. Armed with incontrovertible facts any expeditor should be able to get the materials we need flowing to those who need them.

Let us not be, as Kruckman describes it, an industry sitting at home patiently and respectfully waiting to get something. Let's be an industry which *knows* exactly what we need and let's be persistent and vigorous in presenting our needs to everyone who can help us get what we need when we need it.



# Interpretations, Amendments, Easements To Existing Orders

## AA-1 For Heating Repairs

War Production Board,  
Washington, D. C.  
Gentlemen:

In your release WPB-2132, you announce a priority rating of AA-1 for "essential maintenance and repairs."

From the way 2132 is worded, we assume that heating system maintenance and repair under order P-84 should get an AA-1 rating instead of the present A-10.

The Chicago office of WPB construes this announcement to mean AA-1 rating on orders for certain critical industries which are now getting AA-2 to AA-4, and not for retailers or contractors.

Will you please advise if maintenance and repair under P-84 is entitled to an AA-1 rating?

Yours very truly,

AMERICAN ARTISAN.

WAR PRODUCTION BOARD  
Washington, D. C.

American Artisan,  
Chicago, Illinois.  
Dear Mr. Wilder:

In reply to your letter of December 7 asking for information concerning WPB-2132, the release is based on a broad policy determination of the Requirements Committee which will be implemented in a short time by specific orders and instructions. When these are made, the specific cases in which the AA-1 rating may be applied for repair and maintenance items will be stated and the information will be made available at that time.

Sincerely yours,

(Signed) ALFRED D. CHARLES,  
Division of Information.

EDITOR'S NOTE: Since this reply was received, announcements seem to indicate that for such things as furnace repairs the dealer will continue to extend the A-10 rating permitted under P-84 to his jobber or furnace manufacturer, but the furnace manufacturer on his Production Requirements Plan certificates will be assigned an AA-1 rating for materials required to manufacture essential repair and maintenance parts. Thus the manufacturers will be assured of materials by the AA-1 rating and will be permitted to sell the manufactured parts on A-10 ratings extended to them by dealers or jobbers.

## Registers May Be Made

IN THE December, 1942, ARTISAN, page 43, reporting the amendments to M-126, we reported registers and grilles as included in the A list of prohibited

products. WPB, in a verbal order, permitted manufacture of registers until February 1, but this verbal order was withdrawn. An appeal has been entered by the register manufacturers and word from Washington is that the request to remove registers and grilles from the A list, thus permitting manufacture, is now under consideration and may be acted upon favorably. Definite decision is hoped for shortly.

## A-10 Sheet Situation

Iron and Steel Branch,  
Warehouse Unit,  
War Production Board,  
Washington, D. C.  
Gentlemen:

Attached to this letter you will find an editorial from the August AMERICAN ARTISAN; also an editorial from the November issue and tear-sheets of the report of the sheet steel distributors convention in Chicago on which the November editorial was based.

Amendment 7 to M-21-b permits jobbers to sell either 5 per cent of their quarterly quota or 150 tons of sheets on priority ratings lower than A:1:a.

Amendment 7 is a considerable improvement over amendment 6, because a great many small contractors who must keep residential heating systems in repair are served by jobbers who sell a very large portion of their sheet stocks under order P-84, which bears an A-10 rating.

The jobbers present at the Chicago meeting seemed encouraged at this change but Mr. Stuart was not able to tell the convention the approximate number of tons of metal which has been set aside for jobber disposition under M-21-B. If you have any tonnage figure, will you please send as complete a report as possible?

Yours very truly,

AMERICAN ARTISAN.

WAR PRODUCTION BOARD  
Washington, D. C.

December 1, 1942.

American Artisan.  
Gentlemen:

In reply to your letter of November 24, 1942, I regret to advise you that this office has not yet received a complete report from all producers of galvanized sheets covering the tonnage which has been directed to warehouses for maintenance and repair purposes. Because the statistical data available to the War Production Board at the present time regarding mill shipments of galvanized sheets to warehouses during 1940 includes both flat sheets and formed roofing and siding, it is impossible to determine the tonnage of flat sheets alone which has been directed.

Yours very truly,

(Signed) J. R. STUART,  
Chief, Warehouse Branch, Steel Division.



## AA-1 Repair Application

January 12, 1943.

War Production Board,  
Director General for Distribution,  
Washington, D. C.

Gentlemen:

WPB Release No. 2344, dated January 8, announces that the twelve regional directors of WPB are now authorized to approve and issue individual preference ratings for emergency repairs up to and including Priority Rating AA-1.

A previous release on the same subject announces that "supplies and materials needed for essential maintenance and repair for housing may be obtained also."

Our Chicago WPB priority office takes the stand that any rating approaching AA-1 will not be granted to house owners for repair equipment, but the order is intended to give war plants a high priority rating for repairs.

Under P-84, repairs to heating equipment in houses carry an automatic A-10. Oftentimes this A-10 rating is not high enough to obtain such materials as galvanized iron, and if higher ratings can be obtained, what should be the procedure?

Should the contractor file a request with this local WPB for a high priority rating to obtain repair galvanized iron if his jobber cannot supply the material on P-84, A-10?

If this is the proper procedure, should the application be made on some special form, and if so, what form, or should the application be made by letter or in person, or how?

If this high priority rating is not intended for residential maintenance, then we believe the industry should be advised of this fact because publicity is being given to high priority maintenance and contractors are under the impression that there is some means whereby they can obtain high ratings.

An early reply will be appreciated.

Sincerely yours,

AMERICAN ARTISAN,  
J. D. Wilder, Editor.

WAR PRODUCTION BOARD  
Washington, D. C.

January 28, 1943.

Keeney Publishing Company,  
6 North Michigan Avenue,  
Chicago, Ill.

Gentlemen:

Your letter of January 12, 1943, addressed to Mr. Ernest Kanzler, relative to the issuance of emergency ratings for maintenance and repair, by the Regional Office of the War Production Board, has been referred to this Division for reply.

This procedure was established to afford a quick means of relief for manufacturers in repairing emergency breakdowns which would directly affect the production of war equipment. However, in cases of extreme emergency, it can be used for residential maintenance. Application must be made of Form PD-333 and the total cost of material involved should not exceed \$500.00. The application should be filed with the Regional or Field office. These offices are authorized to grant higher ratings than those nor-

mally obtainable with Preference Rating repair orders such as P-100 and P-84, if necessary.

We trust that this information will answer your questions.

Very truly yours,  
JOSEPH F. WILBER, Director,  
Plumbing and Heating Division.

## Inventory Limitation Order L-219

MUCH publicity has been given by newspapers to Inventory Limitation Order L-219, which restricts the inventory a retailer may carry. So far as the warm air heating dealer and sheet metal contractor is concerned, L-219 will not be applicable in most cases because—

1. L-219 exempts any merchant whose inventories were less than \$50,000 at the end of any quarter of their Federal Income Tax Year.
2. L-219 exempts any merchant whose net sales during the 12 months preceding the last day of that quarter were less than \$200,000.
3. L-219 exempts any jobber handling "supplies" as listed in L-63, which includes "plumbing and heating supplies."
4. L-219 exempts dealers of "lumber and building supplies except hardware."

Our readers, then, need not be concerned by this order.

## Blower Ceiling Prices

Office of Price Administration,  
Washington, D. C.

Gentlemen:

A bulletin from the National Warm Air Heating & Air Conditioning Association announces that blower-filter units "when used as a part of the complete forced warm air units" are subject to maximum price regulation 188.

This same bulletin also states: "When blower-filter units are sold separately for conversion installations, they are subject to maximum price regulation 136." Is this the ruling?

A blower-filter unit can now be sold only as a replacement for a similar unit which has been worn out and we ask if such equipment is ceilinged.

Sincerely yours,

AMERICAN ARTISAN.

OFFICE OF PRICE ADMINISTRATION  
Washington, D. C.

American Artisan.

Gentlemen:

These blower-filter units when sold separately, whether for conversion, repair or other use, are subject to the terms of Maximum Price Regulation No. 136, a copy of which is enclosed. We direct your attention to Appendix A, section 1390.32(h) therein.

When these blower-filter units are incorporated in a warm air furnace the sale of the complete furnace is subject to the terms of Maximum Price Regulation No. 188.

Very truly yours,  
(Signed) NEIL STAEBLER,  
Price Executive, Building Materials Branch.

Where we stand, now, in

## The Housing Situation

It is becoming apparent that the war can't be won unless war workers are comfortably and conveniently housed. Workers living in barns, chicken coops, tents, ramshackle buildings—with children running loose—is not intelligent planning and is not conducive to maximum war effort. No matter how scarce materials are, we must continue to enlarge our war worker housing program. This report tells what we did in 1942 and what is programmed for 1943.

**F**OLLOWING is a report on all housing activity, both public and private, as announced January 1 by National Housing Agency.

In 1942 a total of 278,000 *new* war housing units of all types were completed under preference ratings with public and private funds. This included 150,000 family units of private war housing and 128,000 units of public war housing. An additional volume of private housing serving war needs was completed in the early months of the year without priorities assistance.

### Tentative Program for 1943

Under construction at the start of 1943 will be some 80,000 private family units and 214,000 units of public war housing. A total of 170,000 family units remain to be started by *private* builders during 1943 under the national priorities quota of 400,000 private financed war housing units. It is estimated that 170,000 additional units will be started in the first six months of 1943 out of funds presently available for *public* war housing. Of this total 146,000 units are already in pre-construction stages of development.

Announces NHA—War Production Board, which controls all materials, and the National Housing Agency are now in full accord on the place of housing in the war effort. This joint policy recognizes that a certain minimum of new housing for essential immigrant workers is necessary to war production and that a portion of the scarce materials supply will be earmarked for this purpose.

This agreement eliminates, for the duration, any new housing not directly contributing to winning the war. But the amount of materials that can be allocated to housing is not sufficient to meet the minimum needs with *new* structures. Our reservoir of existing housing must supply a large portion of the demand.

### New Quarters From Old Houses

To achieve a fuller use of this asset already at hand, the NHA in October, 1942, created a Homes Use Service. This department is responsible for a nationwide program which includes (1) the full utilization of vacant dwellings and vacant space in structures as they stand, with special appeal to home owners to take in war workers, and (2) a conversion plan, under which suitable existing structures will be remodeled to create additional family units. Where a property owner cannot finance the conversion himself, or borrow funds to do so, the Government will lease his

house or building, remodel it with federal funds, manage the property and pay him a fair rental, and return the structure to him after the war.

A most important development during the year was the overall drop of 34 per cent from 1941 in *new* family units started. The Bureau of Labor Statistics reports that family units of public housing of various types started in the year just ended represent an increase from 1941 of 80 per cent, but the private units reported placed under construction in 1942 was a reduction of 51 per cent. These trends reflect, of course, the concentration on war housing built under the priority system and the increasing use of temporary construction.

### 1943 Housing Will Follow War Plants

Since housing must be strictly rationed to meet the need only of essential immigrant war workers, the program for 1943 depends to a large extent on the size and complexion of the nation's war production schedules, says NHA. War housing activities follow the course of war production. A large new plant opened in a rural area or small community will require more new housing than will a similar plant starting up in a larger populated center. As the strategy of a global war shifts, making changes in munition production schedules, so the manpower and housing needs fluctuate in the various localities serving the production industries.

### Dormitories, Trailers, Apartments

Federal Public Housing Authority constructs and manages all public war housing, or assigns these functions to other federal agencies or local housing authorities. The 128,000 public war housing units completed during 1942 included 80,000 family dwelling units, 8,000 war apartments for two-person families, 31,000 dormitories for single workers, and 9,000 trailer homes. Another 144,000 family dwelling units, 10,000 war apartments, 52,000 dormitory units, and 8,000 trailers are under construction. The public war housing in preconstruction development includes 99,000 family units, 18,000 war apartments, 24,000 dormitory accommodations, and 5,000 trailers.

More than 500,000 war workers and members of their families are now living in public war housing accommodations, and this number is increasing by more than 50,000 a month. The number of persons living in units designed for families of three or more



persons exceeds 450,000, with the balance distributed among war apartments, dormitory units and trailers.

Dormitory and war apartments, both of which are self-contained units with cafeterias, infirmaries, and recreation centers, have been developed to fit a particular need in the expanding war production drive. These structures are designed principally for ship-building and other overcrowded production areas where large numbers of single workers and couples are employed. They are not designed for families with children.

The shortage of critical materials has resulted in the FPHA engaging in extensive study and research to develop substitutes for use in the war housing program. Permanent-type housing now being built uses only 2,700 pounds of critical materials for each unit, or about 28 per cent of the 9,700 pounds average required for permanent prewar public housing. In the new temporary-type family units, less than 2,000 pounds of scarce materials are being used, and the saving on dormitory and apartment units runs much higher.

#### Private Construction Under FHA

Under Federal Housing Administration, primarily engaged in insuring mortgages on private housing, private builders started construction of approximately 156,000 dwelling units in officially designated critical housing areas during 1942. The insured mortgages financing this construction totaled more than a half billion dollars.

Approximately 195,000 new dwelling units, financed by FHA-insured mortgages, including both war and non-war housing, were completed by private builders during the year. At the year-end, FHA commitments were outstanding to insure mortgages financing approximately 43,000 dwelling units for war workers on which construction had not yet started.

In addition to loan financing new war housing, the FHA insured a substantial volume of loans under Title I of the National Housing Act to finance remodeling to create additional living units, for oil burner conversion and other fuel conservation improvements, and for essential repairs and maintenance to keep existing housing in sound condition. Loans insured under Title I amounted to approximately \$155,000,000 in 1942.

Private loans of all types insured by the FHA during the year totaled approximately \$1,125,000,000. Of these, approximately \$770,000,000 financed new dwelling construction, substantially all for occupancy by war workers. A part of these loans involved projects started late in 1941 and completed during 1942. In addition, mortgages of approximately \$200,000,000 on existing home properties were insured during the year.

#### Government Leased Remodeling

Liberalization of the contract under which the Government leases private housing and buildings through its Homes Use Service program for conversion into additional accommodations for war workers and their families was announced December 21.

1. Under the revised procedures, the Government will be obligated to complete any conversion project it starts, or to restore the building to its original condition. If the property owner should desire further alterations than those deemed sufficient by the Government, he will be permitted to use his own funds

for the purpose, participating in the same conversion project.

2. If the Government takes over mortgage payments on a property and the mortgage is paid up during the life of the lease, the Government from that date on will add the amount of the mortgage payment to the monthly rental it pays the property owner.

3. If the Government exercises its option to extend the lease beyond the basic seven-year period, during which conversion costs will have been amortized, the property owner will be paid the money which previously was used to amortize these costs.

4. The over-all cost of conversion in the future will be limited to \$2,500 per unit produced, instead of \$400 per room—a modification which will permit many projects which would have to be rejected under the Government's original regulations.

5. Another major obstruction was removed by permitting the signing of a lease providing for future occupancy, thus allowing property owners reasonable time for orderly evacuation of their premises.

#### Want 1,600,000 Units From Old Houses

The conversion program, operated by Homes Use Service, expects to provide dwelling units for families of 1,600,000 additional in-migrant war workers expected to flood some 85 war production centers in the United States by July 1, 1943.

It is estimated by NHA that we will need 1,320,000 units, of which 650,000 must be provided through a more complete use of existing structures, both with and without conversion. The remaining 670,000 dwelling places are expected to be provided by new construction.

Conversions will be made under the supervision of the Home Owners' Loan Corporation, which, following the construction work, will sublease the dwellings thus created to war workers and manage them through management brokers as it does in the case of its own properties.

Conversion jobs, whether family dwelling units undertaken exclusively through Homes Use Services, or dormitories, exclusively converted by the Federal Public Housing Authority, will be done according to soundest construction standards and practices, commensurate with the current shortage of materials. All detailed plans are prepared by qualified architects retained, in the case of residential conversions, by HOLC on behalf of the National Housing Agency. Their plans and specifications, after approval by HOLC and the owner of the property, will be made available to construction contractors for preparation of bids.

Homes Use Service, however, is not relying entirely upon conversion to supply the 650,000 units expected from existing structures. Many units will be made available through extensive use of homes already suitable for war workers without conversion.

#### All Kinds of Buildings to Be Converted

This includes proffering by property owners of rooms in their homes and existent dwelling units or space that may be used as dwelling units without conversion, in such structures as storerooms, warehouses, storage rooms, hotels, summer cottages, private schools, clubs, tourist camps, former CCC camps, passenger boats, loft buildings, garages, dance halls, armories, audience halls of college dormitories. If the

*(Continued on page 65)*



# On Our Industry's Front

## Furnace Concentration

**R**EPORTS National Warm Air Heating and Air Conditioning Association—"there have been no definite indications in the past month that there will or will not be concentration of manufacturers in the cast-iron furnace solid fuel industry. Order L-22 expired on December 31. In a letter to furnace manufacturers a number of days ago, in view of the expiration of Order L-22, we reflected information which we thought might be the desire of the War Production Board to pass on to the industry that cast-iron furnace manufacturers produce for the first quarter of this year 25 per cent of the production for the year 1942 which was permitted under limitation Order L-22."

## Service Men Deferment

Office For Emergency Management  
WAR MANPOWER COMMISSION  
Washington, D. C.

December 18, 1942.

Mr. J. E. Peterson, President,  
Sheet Metal Contractors Association  
of Illinois,  
28 West Hinsdale Avenue,  
Hinsdale, Illinois.

Dear Mr. Peterson:

Your letter of December 1 addressed to the War Manpower Commission has been referred to me for reply.

In recent determinations of the War Manpower Commission's Committee on Essential Activities a number of repair services were designated as essential, including the repair of heating installation and heating equipment in domestic, commercial, and industrial buildings. An important qualification to the group of repair services designated as essential reads as follows:

"It is intended that consideration be given only to individuals qualified to render all-around repair services for types of equipment specified herein, as required for the minimum essential needs of the community."

The specific list of occupations that are regarded as essential within repair services is expected to be made available shortly to local boards of the Selective Service System and to local offices of the United States Employment Service.

Sincerely,

(Signed) COLLIS STOCKING,  
Associate Director, Bureau of Program  
Planning and Control.

## Truck Tire Registration

**O**FFICE of Defense Transportation, on January 12, postponed the final date for initial commercial motor vehicle tire inspections, as required by General Order ODT No. 21, from January 15 to February 28, 1943.

After the initial inspection is made, the vehicle

must then be presented for regular inspections every 60 days or every 5,000 miles, whichever occurs first. All inspections must be made by inspectors designated for this service by the Office of Price Administration.

If the tire inspector finds the vehicle's tires in good condition he endorses the Certificate of War Necessity. Certificates which do not have this valid endorsement cannot be used to obtain gasoline ration coupons from local War Price and Rationing boards.

Moreover, General Order 21 provides that no commercial motor vehicle may be operated following a tire inspection unless the inspector has certified that all reasonable and possible adjustments, repairs or replacements necessary to assure maximum conservation of the vehicle's tires have been made.

## Water Heaters

**G**AS-FIRED and oil-burning water heaters have been added to the list of products which will be manufactured in 1943 only for use in war housing or other war projects by limitation order restricting production and limiting the amounts of metal and metal alloys that may be obtained by the industry in 1943. Production of metal tank jackets and metal tank supports is suspended and the installation of metal tank jackets is prohibited with certain minor exceptions.

Civilian needs for replacements of gas-fired water heaters in 1943 and thereafter must come out of existing stocks. Necessary replacements may still be made for some time in the future, however, since inventories of finished equipment are comparatively large at present.

Officials of the plumbing and heating division suggest caution on the part of civilian consumers in replacement of their gas-fired water-heating systems. Coal heaters should be substituted, they advised, because of the present critical situation in the production and consumption of gas for household purposes.

## Cooling System Priorities

**W**PB has announced that higher priorities will be granted to obtain parts and equipment required for repair and maintenance of air conditioning systems—including cooling systems.

Readers should not be misled by this announcement because "comfort cooling systems," meaning thereby cooling and air conditioning installations in such places as auditoriums, bars, funeral parlors, hotels, moving-picture houses, night clubs, offices, residences, restaurants and stores, are excluded from the amendment.

You will not, therefore, be granted any of the AA-2x's or AA-4's which amended P-126 makes available for repair and maintenance. The types of systems which the amendment does cover are army, navy, etc., cold storage houses, food processing, steel mills, farm milk coolers and installations which directly aid the war effort.

## AA-3 for War Housing

**A** BLANKET preference rating of AA-3 has been assigned by WPB to deliveries of materials for use in the construction of most of the war housing projects programmed by the National Housing Agency.

The order makes the up-rating automatic for the builder, affects the war housing for which preference rating orders P-55 have been issued to a builder, or P-19-d and P-19-h have been issued to the Federal Public Housing Authority. The builder, however, is responsible for extending the new rating to his suppliers in accordance with Priorities Regulation 12 of WPB.

In cases where the up-rating applies it is effective whether the war housing is publicly or privately financed, whether it is new construction or conversion of existing structures and whether the type of structure is permanent or temporary.

In a second provision, all AA-4 ratings assigned by preference orders of the P-19 series, covering essential construction projects, were raised to AA-3.

The up-rating applies to all AA-4's both in the case of orders assigning blanket ratings and orders assigning split ratings including AA-4's. However, in the latter case the up-rating to AA-3 applies only to those items that were previously rated AA-4. No change was made in ratings below the AA-4 level.

The up-rating is automatic for the builder, but he is responsible for extending it to his suppliers in accordance with Regulation 12.

## To Get More Truck Gas

**A** NEW procedure has been set up by the Office of Defense Transportation to handle appeals from commercial motor vehicle operators who consider the mileage and fuel allotments provided in their Certificates of War Necessity to be inadequate for their needs, the ODT announced December 8.

Some of the original applications did not contain sufficient information for the ODT to determine with reasonable accuracy what the mileage requirements of the operators were. In such cases, certificates were issued bearing mileage and fuel allowances designed to tide the operators over until additional information could be obtained through appeals and new or supplemental certificates issued.

In order to facilitate the issuance of the new or supplemental certificates to bring mileage and fuel allowances into line with the actual needs of the operators, all appeals will be handled by the ODT's 142 district offices, located in principal traffic and agricultural centers throughout the country. These appeals may be filed immediately. The original instructions requiring that the appeals be withheld for 30 days are now cancelled.

Every effort will be made, ODT officials said, to grant commercial motor vehicle operators as much mileage and gasoline as they need to carry on necessary operations on an efficient wartime basis. Operators were urged to assist in attaining the objectives of the conservation plan by eliminating empty back hauls, partial loads, unnecessary cross hauls, and other mileage wasting practices wherever possible.

All appeals for adjustment of mileage and fuel allowances in the original certificates, regardless of the reasons for the appeals, will be made on the same

form—CWN-5-S for operators of one or two commercial motor vehicles, CWN-5-F for operators of more than two such vehicles.

In appealing for additional mileage and fuel allowances, operators will be required to describe in detail the purposes for which the supplemental allotments are required.

To allow time to handle appeals for new or supplemental certificates, an arrangement was made with the Office of Price Administration whereby commercial motor vehicle operators who claim their ODT mileage and fuel allotments are inadequate could obtain temporary transport rations sufficient to continue their operations through December and January.

The gallonage allowed in such temporary transport rations will be deducted from the amount finally allowed by the ODT for the period beginning November 22, 1942, and ending March 31, 1943. Since this deduction will be made, it is important that operators use no more of their temporary transport rations than necessary.

Form CWN-5 (F or S) will be used in all cases where original certificates require revision or adjustment, such as cases where additional or replacement equipment has been acquired, where emergency conditions require additional mileage and fuel allotments or where any other condition makes a correction necessary.

Form CWN-2, to be used in cases where original certificates have been lost or destroyed, is simply a request for issuance of duplicate certificates. Appeals also may be taken from allotments on these duplicate certificates by filling out form CWN-5.

## Coal Stoves For Oil Users

**F**UEL Rationing Division of the Office of Price Administration is planning the selective distribution of a large number of coal heating stoves. A large quantity of fuel oil will be conserved for essential war purposes through the substitution of these coal heating stoves for heaters which are oil-fired.

Concurrently, the War Production Board is taking the following steps to provide for the production of substantial quantities of these units:

1. The weight and quantity restrictions on coal heaters under Order L-23-c have been completely lifted until January 31, 1943, and the manufacturers' iron and steel quotas have been increased 50 per cent for the months of February and March, 1943, to permit production of some 300,000 stoves.
2. Approximately 100,000 coal-burning stoves of the magazine type Army No. 1 heater, already manufactured for Army account, have been released for civilian use.
3. The War Production Board has also released additional stock piles of materials for the Army No. 1 heater, as well as several months' productive capacity in the plants working under Army heater contracts.

This program is of particular interest to all dealers handling heating stoves, because its success will largely depend upon their cooperation in making certain that these heating stoves are available to those customers who need them and who are qualified to purchase them under the Regulations which the Office of Price Administration has promulgated.

The Emergency Heating Stove Rationing Program  
(Continued on page 71)



*There are no official forms for*

# Maximum Price Regulation No. 251

But your estimate and cost record sheet will be satisfactory if it shows the proper data. Or a letter arranged as shown in this article—again giving the data required will do. Remember these reports are only on jobs selling for more than \$500.

**I**N the November, 1942 issue, page 23, we announced Maximum Price Regulation No. 251, which is, in effect, a price ceiling order on all construction activities. This includes the sale of furnaces, repairs, sheet metal work, but, as pointed out, does not cover "services" such as servicing furnaces for a flat price per year—such services are covered by other price ceiling regulations.

Two questions arose after our publication of the order—First: what forms, if any, are required for the customer and for OPA on jobs selling for more than \$500. We asked OPA if any standard form was required and Neil Stabler, Price Executive, Building Materials Branch, OPA, replied as follows:

"There are no forms to be supplied by OPA for the filing of reports. It is intended that contractors may use their own stationery, following the methods indicated. Several associations have developed their own forms. Many individual firms have had their own forms printed or mimeographed and these are proving quite satisfactory. The filing of estimate sheets or other working papers is an alternative for the convenience of the contractor, the only requirement being that these papers contain the information required in the formulas specified. Such reports should specify lump sums for each category."

You may, then, file with OPA a letter showing the necessary data or you may give OPA a copy of your estimate sheet. For the final report showing actual costs (not necessarily your estimates) you can send a letter or a copy of your cost sheet.

If you use a copy of your standard estimate sheet, be sure that the sheet shows:

1. Estimated cost of materials and supplies.
2. Estimated labor costs.
3. Estimated other direct costs (rented equipment, social security taxes on labor, unemployment compensation, permits, premiums on surety bonds, traveling expense, workman's compensation, liability insurance, etc.)
4. Estimated reserves for contingencies (should include any penalty clause costs if contract is not fulfilled).
5. Estimated margins (include overhead costs; show profit in dollars and cents; show how overhead is figured).
6. Estimated total cost to the customer.

## Satisfactory Letter Form

If you chose to submit this estimate as a letter on your stationery, the following probably will comply with OPA's requirements:

January 23, 1943.

Office of Price Administration,  
100 Main Street, Chicago, Ill.

(Re. MPR 251)

- 1—For contract to install new furnace in home of John Jones at 200 Cedar St., Chicago—one new furnace (Heatmaster, No. 300) plus a stoker (Coal Feeder, No. 1) plus one new return air (using substitute board).
- 2—Estimated cost of materials and supplies—\$305.50.
- 3—Estimated labor cost—\$105.00.
- 4—Estimated other direct costs—\$14.90.
- 5—Estimated reserve for contingencies—\$0.00.
- 6—Estimated margins—\$105.00. (Based upon overhead costs of 100% of productive labor. This was the overhead formula used prior to March 31, 1942.)
- 7—Final estimate contract price—\$530.40.

Yours very truly,  
(Signed) **WILLIAM BROWN,**  
Ready Furnace Company,  
111 Lee St., Chicago, Ill.

## Certificate of Compliance

The second requirement of MPR No. 251 causing some concern is the "Certificate of Compliance" which you must give the customer at the time of final settlement on any job selling for more than \$500. You must also send OPA a copy of this certificate.

No exact wording has been designated by OPA, so some wording similar to the compliance letter shown on the next page should be satisfactory until a definite wording is announced.

## Summary

An excellent summary of this important order has been prepared by Secretary N. J. Biddle of the Detroit Association of Warm Air Heating and Air Conditioning Contractors for distribution to his membership. Even though this summary reiterates somewhat the points published in the ARTISAN's November report, we believe re-publication is worth while because many readers perhaps do not appreciate the far-reaching effect of MPR 251.

Following is the summary:



January 30, 1943.

Mr. John Jones,  
200 Cedar St.,  
Chicago, Ill.

Dear Sir:

This is to certify that our contract with you to install one new Heatmaster Furnace No. 300 with a Coal Feeder Stoker No. 1, plus one new return air duct, complies with the terms of Maximum Price Regulation No. 251. The ceiling price of this contract was determined under Maximum Price Regulation No. 251 as \$530.40.

The contract price for this installation is \$530.40.

Yours truly,

(Signed) WILLIAM BROWN,  
Ready Furnace Co.,  
111 Lee St., Chicago, Ill.

#### MAXIMUM PRICE REGULATION NO. 251

**COVERS**—All construction and repair involving both labor and material from a nickel to a billion dollars or more on an installed or erected basis except:

- (a) Any service specifically excluded from General Price Regulation or other applicable price regulation
- (b) Services otherwise specifically covered
- (c) Construction or repair of movable transportation equipment
- (d) Contracts prior to Nov. 5th, 1942
- (e) Certain Government Agencies under certain conditions

ARTHUR JOHNSON Warm air dealer—Sheet metal contractor	
Name	Date
Address	Phone
Type job	Name equipment
Old or new customer	Job completed
Description of work to be done	
Materials estimated	Materials used
Totals	
Labor estimated	Labor used on job
	From To Hours
	M
	T
	W
	T
	F
	S
Totals	
Recap of estimate	Recap of completed job
Labor .....	Labor .....
Materials .....	Materials .....
Job expense .....	Job expense .....
Overhead .....	Overhead .....
Total over-all cost .....	Total over-all cost .....
Selling price .....	Selling price .....
Profit on job .....	Profit on job .....
Flat rate charged .....	Loss on job .....
March 1942 ceiling price .....	Differential .....
Invoice	Paid \$ Journal Journeyman
Accessories sold	Price \$ Journal
March wage per hour \$	Overhead % Sales Prime Cost
Labor Cost	(Compare March peak prices and pricing method with those shown on this job record.)

**PROHIBITS**—Sale, delivery, purchase or receipt of construction materials on an installed basis at prices higher than those established hereunder. This covers any offer, agreement, solicitation or attempt to violate above prohibition.

#### THREE CLASSIFICATIONS—

1. Under \$500.00
2. Over 500.00—Cost plus—TM—Fixed Fee
3. Over 500.00—Contract or lump sum

**NOTIFICATION**—Before signing contract, seller must notify purchaser of existence of MPR No. 251 and make available a copy of same on demand

**PRICES**—The Contractor is prohibited from paying more or charging more than the ceiling prices established in the applicable regulations. This includes all items of job.

**UNDER \$500.00**—The ceiling price is the sum of your material costs, labor costs, any other actual direct job costs plus a margin for administration, supervision and overhead, all of which are not to be more than those used in March, 1942, but plus any increase in labor to July 1st, 1942. You must also furnish a certificate of compliance to customer upon request.

**OVER \$500.00**—Cost plus, fixed fee or TM

- (1) Materials at not to exceed ceiling prices
  - (2) Labor at not to exceed July 1st rates
  - (3) Other actual direct costs including sub-contracts, etc.
  - (4) A margin for administration, supervision and overhead not higher than the highest charged for similar work between Jan. 1, 1939, and March 31, 1942—Must be adequately supported by records. (Nothing for contingencies in this class of work).
- The sum of the above is the ceiling price.  
Must report each such contract to OPA within 10 days with description of job, estimate of costs, estimated margin in dollars and must indicate items of overhead.

#### CONTRACT SALES—

- (1) Estimated material cost—not more than ceiling prices
  - (2) Estimated labor costs—not to exceed July 1st rates.
  - (3) Estimated other direct costs
  - (4) Estimate for contingent reserve
  - (5) Margin—same as item 4 under COST PLUS
- The sum of the above is the ceiling price.

**REPORTS**—Within 10 days after entering into any contract or unit price, the seller shall report to OPA as follows:

- (1) Complete description of the job
- (2) Estimated material cost
- (3) Estimated labor cost
- (4) Estimated other direct costs
- (5) Estimate for contingencies
- (6) Estimated margin
- (7) Contract price

Not less than 10 days before final settlement, the seller shall further report to OPA: items two to five above:

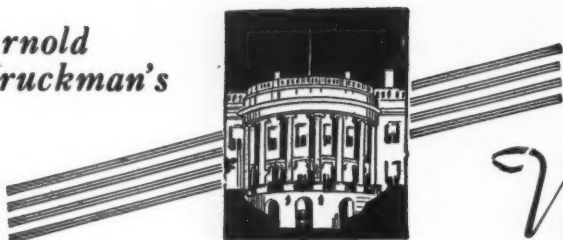
- (2) Actual cost of materials
- (3) Actual cost of labor
- (4) Actual other direct costs
- (5) Actual contingent costs

In lieu of the reports mentioned above, the seller may file his estimate and other working papers provided they contain all of the information required.

**MANUFACTURED**—Or processed equipment or materials, produced by the seller, shall be included at a cost which shall not exceed the lowest maximum at which he would be permitted to sell a third party under any applicable price regulation.

**SALES**—Either TM or contract over \$500.00. Upon completion of the work, the seller must furnish the customer with a certificate of compliance setting forth the ceiling prices as determined under this regulation, the sales price and a statement that the terms of this regulation had been complied with. Copy to OPM

(Continued on page 69)



## Washington Letter

### Our Situation Under CMP

**I**F the present turmoil in WPB is settled in favor of the demands made by Vice Chairman Charles E. Wilson, the general effect will be that the whole Controlled Materials Plan might just as well be scrapped and ditched in its present form. Wilson wants all industry divisions of WPB to be responsible to him, in the interest of what he considers more direct and swifter action. They are now responsible to Ferdinand Eberstadt, Program Vice-Chairman, in their requisitions for materials. The Wilson way would eliminate the initial responsibility to Eberstadt's agency and, obviously, would again require infinite readjustments of the organization and machinery set up under the Controlled Materials Plan.

In an effort, apparently, to bring the whole smoldering mess to a sharp test, Wilson, early in February, ignored the Eberstadt CMP machinery and ordered the industries, through the WPB industrial divisions, and through Army, Navy, and the rest of the 14 Claimant agencies, to place with these agencies their requisitions for 34 critical components used in production of rubber, escort vessels, merchant shipping, aircraft, high-octane gasoline, and other supplies, during the first half of 1943, not later than February 6. The order struck practically all industries in war-work, or near-war work, like a bombshell. It hit prime contractors, subcontractors, and sub-subcontractors. It came from a source they could not ignore, yet which had nothing to do with the CMP machinery they had been instructed previously to utilize for the purpose. Most industries had ten days or less to comply when the order reached them.

#### Who's Running What?

The din in Washington over the telephone and telegraph wires, and by reason of the calls of Washington representatives at Government offices, literally was terrific. Within a few hours it was augmented by the confused and perplexed business men who rushed to the Capital by railroad, airplane and every other available method of transportation, to uncork their exasperation on somebody. Most industrial groups were unable to comply with the order within the time limit. As this is typed it is assumed a showdown is approaching which will determine what must be done about the order and which will determine the fate of CMP, Eberstadt, Wilson, Nelson, and probably, to some degree the present form of WPB.

Business men, spending every energy in producing for the War under difficult conditions, manifest-

ly are utterly tired of the disruptive internal office politics in WPB over jurisdictional issues. It is clear from what they say, during their present invasion to break this blockade, that they regarded CMP as a settled method which would enable them to proceed under known conditions for at least a year. CMP was regarded as clear and intelligible and intelligently directed.

Generally speaking, they did not like the brusqueness of Eberstadt and humanly sympathized with Wilson, but they sensed in Eberstadt a clear and definite skill in getting things done. They were willing, apparently, to accept certain arbitrary methods if it made easier their effort to produce for the war. They had heard, as we here had heard, within a few weeks after CMP was announced, that it would be wiped out. But they assumed this was the familiar Washington gossip and that it was not credible WPB would again be thrown into turmoil. The business men who have come here recently, apparently feel the problem really heads up to Donald Nelson. It seems to be their sentiment that this time he must eschew compromise and cut clean in his ultimate decision. Otherwise they fear more turmoil will be inherent in the compromise.

#### Claimant Agencies Defined

Under the original CMP plan there are now 14 claimant agencies through which industry requisitions critical materials. They were listed early in February as: War Department, Navy Department, Aircraft Scheduling Unit, Maritime Commission, Board of Economic Warfare, Office of Lend-Lease Administration, Office of Civilian Supply, Facilities Bureau, National Housing Administration, Petroleum Administrator for War, Office of Food Administrator, Office of Defense Transportation, Office of Rubber Director, Office of Power Director.

As you know, war materials, Class A, are requisitioned by contractors through the claimant agencies to whom the contractors are responsible for their business. Near-war, and civilian materials, Class B, are requisitioned by contractors through the claimant agencies which are in control of their industrial regulation. Each agency in turn correlates and trims these requisitions in its own Requirements Committee. Finally these Requirements Committees present the aggregate of the requisitions flowing through each agency to the general CMP Requirements Committee headed by Eberstadt. This general committee, theoretically the court of last resort in allocating the available supply of materials, distributes the materials in bulk



on paper to each claimant agency, and each claimant agency in turn makes the more detailed distribution of available percentages to the several divisions, branches and sections which constitute each agency. Thus, ultimately, each of the subordinate parts of the claimant agencies allocate to contractors or producers their share of the materials currently available.

#### Allotments of Critical Materials

In February, CMP Requirements Committee announced in very general terms the allotments of steel, copper, and aluminum, to be delivered to manufacturers during the second quarter of 1943, meaning the materials they could have for the period between April 1, and July 1. The announcement was made exactly according to the programmed schedule as originally outlined. But it may readily be understood, under existing conditions as they have now been revealed, that the second quarter allocation is necessarily very broad and without detail. Here in Washington this announced allocation is accepted as preliminary, meaning, naturally, that it is tentative, subject to further adjustments. The only figures given out tell us that the 14 agencies collectively were given 15 million tons carbon steel, 2 million tons alloy steel, 600 thousand tons copper, 600,000,000 pounds of aluminum. The 14 claimant agencies apparently made requisition for an additional unallocated 17% carbon steel; 15% alloy steel, 16% copper, and 14% aluminum.

#### Our Claimant Agency is OCS

The requisitions for near-war and non-war civilian needs were scheduled to be filled through the Office of Civilian Supply on February 9. These requisitions include inventories required for furnaces and for the sheet metal needed by the industries whose members read the AMERICAN ARTISAN. Generally speaking the needs for repairs and replacements are presented by the Plumbing and Heating Division through the Office of Civilian Supply; and the needs for war-housing are presented by the same Division through the National Housing Administration. The unavoidable overlapping is correlated by the Requirements Committee of the Facilities Bureau through which both the Plumbing and Heating Division and the National Housing Administration processes its projects. Obviously, furnaces and metal for purely military projects, such as war plants and barracks and cantonments and similar undertakings, are routed through the claimant agencies directly in charge, agencies like the Army, the Navy, the Maritime Commission. These are the schedules that come directly under CMP processing by the vertical route, subcontractor making his requisition on contractor, and contractor making his requisition on the overall prime contractor, who in turn makes the collective requisition on the agency through which procurement has been negotiated. And, again, any overlapping in these requisitions with the requisitions that come through the Office of Civilian Supply and the National Housing Administration are correlated by the Facilities Bureau.

The requisitions which move vertically towards what for the want of a better term we call direct War agencies have naturally been easiest to assem-

ble. They generally come from what, also for the want of a better term we still call Big Business, prime contractors. They tell you here that the term does not necessarily mean that the industries which go the other way are not just as big as some of the vertical groups. But the industries which, like non-war furnace producers and sheet metal fabricators and contractors, move their requisitions horizontally through the Plumbing and Heating Division and the Office of Civilian Supply, are more numerous and often are less accessible. It is emphasized here that these industries (which still use the PRP requisition or its equivalent CMP4 or the new form PD25-F), have not been slow in making their returns, but that it has been difficult to process the returns because this phase of CMP in some aspects was not sharply clear either to the industries or to the agencies in Washington.

#### Jobbers Must Distribute Small Orders

It also is pointed out that many users of metal for repairs and replacements, scattered around the country, require relatively small quantities. These quantities are so small individually that virtually no provision has yet been made for their proper supply. It is recognized here that these workers in metal supplying much needed services, are among those who constitute the backbone of the communities in which they do business. Men like Deputy Director Ronald Allwork of the Plumbing and Heating Division earnestly desire to build the bridge that will enable the WPB to take care of needs of these Smaller Businesses. But they have not been able to establish contact with them through their wholesalers, and there does not appear to be an organized source through which they have been able to reach them.

The point of view in Washington is that some of these service fabricators have suffered hardships mainly because the people here scarcely knew about them, did not know how to maintain firm relations with them and could not help them as they have been able to help other units. It is pointed out that the groups which are able to maintain the expeditors known here as "material scouts," have been able to secure a fair share of materials available. These material scouts, privately employed, not only run down the materials required, but uncover the Orders and the methods by which the materials may be secured. Moreover, they clear away the underbrush of transportation Orders, labor Orders, and the many other regulatory impediments that often are insignificant in themselves, but which have closed many shops and smaller factories because the business man at a distance and without proper liaison in Washington, or elsewhere, has not been able to discover how to surmount them.

#### "Material Scout" Might Help Us

Within Government itself, here, there is often found the idea that business men in these groups should find some way to get together to employ the material scout, or whatever his equivalent may be, to expedite their needs. The thought appears to be that many a small business man might easily survive if he had such service. With the best of goodwill and understanding, it is not the kind of ser-

(Continued on page 66)



### Base Prices Under Revised Price Schedule No. 49

(a) Seller's maximum base prices on sales out of warehouse stock in less-than-carload quantities are published on the named product items as follows:

	Hot rolled sheets (10 gauge base)	Galvanized flat sheets (24 gauge base)	Cold rolled sheets (17 gauge base)
Boston .....	3.71 <sup>1</sup>	5.11 <sup>25</sup>	4.68 <sup>27</sup>
New York .....	3.58 <sup>1</sup>	5.00 <sup>27</sup>	4.60 <sup>28</sup>
Philadelphia .....	3.55 <sup>2</sup>	4.90 <sup>29</sup>	4.63 <sup>30</sup>
Baltimore (city) .....	3.50 <sup>1</sup>	5.05 <sup>25</sup>	5.00 <sup>28</sup>
Baltimore (country) .....	3.25 <sup>1</sup>	4.75 <sup>26</sup>	5.00 <sup>28</sup>
Washington, D. C. ....	3.60 <sup>1</sup>	5.15 <sup>25</sup>	5.10 <sup>28</sup>
Norfolk, Virginia .....	3.85 <sup>1</sup>	5.40 <sup>21</sup>	4.50 <sup>28</sup>
Bethlehem, Pa.* .....	...	...	...
Claymont, Del.* .....	...	...	...
Coatesville, Pa.* .....	...	...	...
Buffalo (city) .....	3.25 <sup>1</sup>	4.75 <sup>29</sup>	4.30 <sup>28</sup>
Buffalo (country) .....	3.15 <sup>1</sup>	4.65 <sup>29</sup>	4.20 <sup>28</sup>
Pittsburgh (city) .....	3.35 <sup>1</sup>	4.75 <sup>26</sup>	4.00 <sup>28</sup>
Pittsburgh (country) .....	3.25 <sup>1</sup>	4.65 <sup>28</sup>	4.00 <sup>28</sup>
Cleveland (city) .....	3.35 <sup>1</sup>	4.62 <sup>27</sup>	4.05 <sup>28</sup>
Cleveland (country) .....	3.25 <sup>1</sup>	4.62 <sup>27</sup>	3.95 <sup>28</sup>
Detroit .....	3.43 <sup>1</sup>	4.84 <sup>24</sup>	4.30 <sup>28</sup>
Omaha (city) .....	3.85 <sup>1</sup>	5.52 <sup>23</sup>	4.77 <sup>28</sup>
Omaha (country) .....	3.75 <sup>1</sup>	5.52 <sup>23</sup>	4.77 <sup>28</sup>
Cincinnati .....	3.42 <sup>1</sup>	4.92 <sup>25</sup>	4.37 <sup>28</sup>
Youngstown, Ohio* .....	...	4.40 <sup>27</sup>	...
Middletown, Ohio* .....	3.25 <sup>1</sup>	4.40 <sup>27</sup>	...
Chicago (city) .....	3.25 <sup>1</sup>	4.85 <sup>23</sup>	4.10 <sup>28</sup>
Chicago (country) .....	3.15 <sup>1</sup>	4.75 <sup>23</sup>	4.00 <sup>28</sup>
Milwaukee .....	3.38 <sup>1</sup>	4.98 <sup>23</sup>	4.23 <sup>28</sup>
St. Paul .....	3.50 <sup>1</sup>	5.00 <sup>1</sup>	4.35 <sup>28</sup>
St. Louis .....	3.39 <sup>1</sup>	4.99 <sup>23</sup>	4.24 <sup>28</sup>
Indianapolis (city) .....	3.45 <sup>1</sup>	5.01 <sup>23</sup>	4.25 <sup>28</sup>
Indianapolis (country) .....	3.20 <sup>1</sup>	5.01 <sup>23</sup>	4.00 <sup>28</sup>
Memphis .....	3.85 <sup>1</sup>	5.25 <sup>23</sup>	4.66 <sup>28</sup>
Birmingham (city) .....	3.45 <sup>1</sup>	4.75 <sup>23</sup>	4.78 <sup>28</sup>
Birmingham (country) .....	3.35 <sup>1</sup>	4.75 <sup>23</sup>	4.78 <sup>28</sup>
New Orleans (city) .....	3.95 <sup>1</sup>	5.25 <sup>21</sup>	4.95 <sup>28</sup>
New Orleans (country) .....	3.85 <sup>1</sup>	5.15 <sup>21</sup>	4.95 <sup>28</sup>
Houston .....	3.75 <sup>1</sup>	5.25 <sup>21</sup>	5.43 <sup>28</sup>
Los Angeles .....	4.95 <sup>1</sup>	5.95 <sup>23</sup>	7.15 <sup>20</sup>
San Francisco (city) .....	4.55 <sup>1</sup>	6.60 <sup>24</sup>	7.55 <sup>24</sup>
San Francisco (country) .....	4.45 <sup>1</sup>	6.50 <sup>24</sup>	7.45 <sup>24</sup>
Tacoma .....	4.65 <sup>1</sup>	5.70 <sup>1</sup>	6.63 <sup>28</sup>
Seattle (city) .....	4.65 <sup>1</sup>	5.70 <sup>1</sup>	6.63 <sup>28</sup>

\*Basing point cities against which warehouses equalized freight as of April 16, 1941, and which must now be used in calculating lowest combination prices.

<sup>17</sup> F. R. 1300, 2132, 2473, 2540, 2682, 3330, 3893, 4342, 5176, 6893, 6935, 8948, 10844.

**A** DOLLARS and cents warehouse price schedule for jobbers, dealers and distributors handling iron and steel products for resale was published January 7 by the Office of Price Administration.

Products affected include plates, hot rolled strip, hot rolled sheets, galvanized sheets, cold rolled sheets, and cold rolled bars, all listed in Amendment No. 10 to Revised Price Schedule No. 49 as Amended—Resale of Iron and Steel Products—effective January 11, 1943.

Specific base prices and quantity extras for these vitally important iron and steel products are established in the 25 warehouse centers and 5 mill basing points from which the lowest combination price to any point in the United States is figured.

In general, the prices provided in the amendment reflect the April 16, 1941, base date prices of the sellers listed in the original schedule. In some instances prices are established for certain items either because the listed sellers in a city had no published prices for the items, or because prices charged on the base date by listed sellers were not representative of the major portion of the tonnage sold.

# The Warehouse Price Schedule For Sheets

## [ Revised Price Schedule No. 49—Amended ]

OPA officials emphasized, however, that the amendment does not change the level of maximum prices which prevailed on April 16, 1941, since no seller may exceed his own April 16, 1941, price for a particular commodity even though the new published price is higher.

As originally issued in December, 1941, Schedule 49 established April 16, 1941, as the base date for pricing steel products sold out of warehouses. It provided, also, a basic method for computing maximum delivered prices by referring to prices published by leading warehouses in the country's principal steel jobbing centers on the base date.

Under this procedure, sellers other than listed sellers, in determining their own maximum prices, had to find out, often with considerable difficulty, what the base date prices of listed sellers were. Buyers were put to the same difficulty in seeking to anticipate prices they would have to pay in different parts of the country.

The specific prices listed in the amendment now become the maximum prices for sellers whose April 16, 1941, prices were not lower, and replace references in the schedule to the published prices of listed sellers. This will save both buyers and sellers the trouble and expense of obtaining numerous separate price lists.

Copies of the amendment are obtainable at OPA regional offices.

### Price for Areas Not Listed

In any city (including its free delivery area) for which prices are published, these prices are to be used in determining maximum delivered prices. At points for which prices are not published, maximum base prices are determined by adding less-than-carload freight to the published country prices—the maximum base price becomes the lowest combination of these two factors. If no country price is listed for a city, the city price is considered to be the country price.

A "country price" is a price charged by a seller on shipments outside his own free delivery area.

The provisions of Schedule 49 concerning dislocated tonnage, straight and mixed carloads, the addition of extras, and the seller's own April 16, 1941, prices remain in effect.

The amendment introduces an extra which may be

new to some markets.

In the past, a part of the warehouse industry has published several base prices representing extras for grades, sizes or sections. Thus in some places one or more of such extras have been included in the base price.

"In this period of emergency," OPA said, "simplification through standardization is in the interest of both purchasers and sellers. Therefore, OPA is publishing a single base for each product item and is allowing the difference in base prices of listed sellers in effect on April 16, 1941 (which were the result of extras for grade, size, or section) to be added as an extra to the base price set forth in the amendment."

Five cities which are not listed cities have been shown as factors in computing the lowest combination prices for specific commodities. In each case the prices published are the country prices in effect on April 16, 1941, of a listed seller.

Prices established in the amendment which are not the published prices of a listed seller—because listed sellers in a city had no published price for the commodity in question or because published prices were out of line with the true market prices on April 16, 1941—are as follows:

Cold rolled sheets—Birmingham, Houston, Memphis, New Orleans, Norfolk, Philadelphia, Seattle, Tacoma, Washington, D. C.

Galvanized sheets—Houston, Washington, D. C.

#### Maximum Extras and Deductions

The maximum quantity extras and deductions on these specific product items listed above shall be:

#### Quantity Differentials Per 100 Pounds

1—	Under 100 lbs.....	+\$1.50
	100-399 lbs. ....	+ .50
	400-1,999 lbs. ....	Base
	2,000-9,999 lbs. ....	— .10
	10,000-39,999 lbs. ....	— .20
2—	Under 100 lbs.....	+\$1.25
	100-399 lbs. ....	+ .50
	400-1,999 lbs. ....	Base
	2,000-9,999 lbs. ....	— .10
	10,000-39,999 lbs. ....	— .20
4—	Under 400 lbs.....	+\$ .50
	400-1,999 lbs. ....	Base
	2,000-9,999 lbs. ....	— .10
	10,000-39,999 lbs. ....	— .20
5—	Any quantity	
6—	—Under 300 lbs.....	+\$ .40
	300-1,999 lbs. ....	Base
	2,000-9,999 lbs. ....	— .20
	10,000-39,999 lbs. ....	— .30
7—	Under 100 lbs.....	+\$1.50
	100-399 lbs. ....	+ .50
	400-3,999 lbs. ....	Base
	4,000-9,999 lbs. ....	— .10
	10,000-39,999 lbs. ....	— .15
8—	Under 300 lbs.....	+\$1.00
	300-9,999 lbs. ....	Base
	10,000-39,999 lbs. ....	— .25

9—	Under 100 lbs.....	+\$1.50
	100-399 lbs. ....	+ .50
	400-39,999 lbs. ....	Base
12—	Under 150 lbs.....	+\$1.00
	150-499 lbs. ....	+ .50
	500-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .25
	3,500-39,999 lbs. ....	— .40
13—	Under 1 bundle.....	+\$ .50
	1 bundle to 39,999 lbs.....	Base
14—	Under 150 lbs.....	+\$1.00
	150-2,249 lbs. ....	Base
	2,250-39,999 lbs. ....	— .25
16—	Under 150 lbs.....	<sup>1</sup> +\$ .50
	150-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .20
	3,500-6,999 lbs. ....	— .30
	7,000-39,999 lbs. ....	— .45
	<sup>1</sup> \$1.00 if lighter than 24 gauge.	
17—	Under 150 lbs.....	+\$ .50
	150-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .20
	3,500-39,999 lbs. ....	— .30
18—	Under 1 bundle.....	+\$3.00
	1 bundle .....	+ 1.00
	2 bundles .....	+ .50
	3-24 bundles .....	Base
	25-49 bundles .....	— .10
	50 bundles-39,999 lbs.....	— .20
19—	Under 1 bundle.....	+\$1.00
	1 bundle-449 lbs.....	+ .30
	450-1,499 lbs. ....	Base
	1,500-39,999 lbs. ....	— .15
20—	Under 1 bundle.....	+\$1.00
	1 bundle-1,499 lbs.....	Base
	1,500-3,749 lbs. ....	— .15
	3,750-39,999 lbs. ....	— .25
21—	1-9 bundles .....	Base
	10-49 bundles .....	—\$ .25
	50 bundles to 39,999 lbs.....	— .50
22—	Under 1 bundle.....	+\$ .25
	1-6 bundles .....	Base
	7 bundles-39,999 lbs.....	— .25
23—	Under 100 lbs.....	+\$1.20
	100-499 lbs. ....	+ .20
	500-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .20
	3,500-6,999 lbs. ....	— .45
	7,000-39,999 lbs. ....	— .50
24—	Under 100 lbs.....	+\$1.00
	100-749 lbs. ....	Base
	750-4,999 lbs. ....	— .50
	5,000-39,999 lbs. ....	— .75

(Continued on page 73)



# The Victory Tax

Began with January payrolls and must be reported in April. Here is a quick checkup of your responsibility, of credits and refunds and the Simplified Withholding Schedule

**"B**EGINNING January 1, 1943, every employer is required to withhold, collect, and pay upon all wages and other remuneration (regardless of when earned) of every employee (except certain exempted classifications not affecting this industry) a tax of 5 per cent of the excess of each payment of such wages over the **WITHHOLDING DEDUCTION ALLOWABLE**," which is:

Weekly .....	\$12.00
Bi-weekly .....	24.00
Semi-monthly .....	26.00
Monthly .....	52.00
Annually .....	624.00

Example: A man working five 8-hour days per week at \$1 per hour would earn: \$40.00  
Withholding deduction. 12.00

Taxable balance.....\$28.00 at 5%—Weekly \$1.40  
Per quarter, 13 weeks.....\$18.20

The obligation is on the employer to deduct this money and remit it *sometime in the month following the end of the quarter* to the Collector of Internal Revenue.

Tax money withheld must be turned in to the Collector of Internal Revenue not later than one month after the end of the quarter—Form V-1.

Every individual having a gross income in excess of \$624 must file a Victory Tax return.

Employers are required to give employees a statement of tax withheld (Form V-2) some time during January of each year or at the time employment is terminated. Duplicates must be turned in to the Collector at the time of filing. All forms may be secured from Department of Internal Revenue.

For employees paid an hourly rate, salary or drawing account plus a commission or bonus, the total so received less the withholding amount is the taxable balance.

If the relationship of employer and employee actually exists, any other designation by either has no bearing.

Errors made by withholding agents may be corrected in the next quarter. "Criminal and civil penalties are prescribed for wilful failure of any employer to furnish statements to any employee showing the information required under the Act or Regulations made pursuant thereto, or for false or fraudulent statement." The criminal penalty is a fine of one thousand dollars or one year imprisonment, or both,

in addition to the civil penalty of fifty dollars for each such failure. Employers are also subject to penalties for failure to make and file a timely return.

## Use Social Security Methods

In general, exemptions from the withholding provisions are patterned after the social security tax for old age and survivor benefits insurance. For example, an employer is not required to withhold the tax on independent contractors. Whether a person is an employee or not is determined by the standards used under the Social Security Act.

Since the withholding provisions of the Victory Tax are so similar to procedures under the Social Security Act, it would appear feasible for employers, in keeping their payroll records, to add a column and follow the same system as for social security payments.

## Complications

Victory Tax procedures are complicated, however, by two features—the post-war credit or refund and the current credits.

Taxpayers are allowed *post-war credits or refunds* against the Victory Tax in the following amounts for each fiscal year:

- (1) Single person: 25% of tax or \$500, whichever is less.
- (2) Head of family or married person: 40% of tax or \$1,000, whichever is less.
- (3) Married persons filing separate returns: each 40% of tax or \$500, whichever is less.
- (4) Married persons filing joint return: 40% of tax or \$1,000, whichever is less.
- (5) Dependents: an amount equal to 2% of the tax or \$100, whichever is less.

However, the amount of post-war credits is reduced by the amount of any *current credit* allowed. Current credits against the Victory Tax may be taken for the following expenditures:

- (1) Life insurance premiums on insurance in force on September 1, 1942.
- (2) Amounts paid on indebtedness during the taxable year. The upper level of indebtedness is limited to the smallest amount of debt, outstanding between September 1, 1942, and December 31, 1942.
- (3) United States obligations (war bonds) secured during the taxable year.

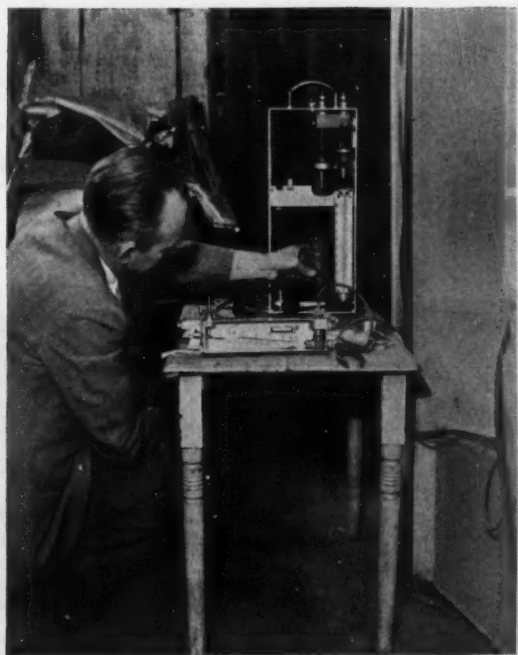
## Simplified Withholding Schedule

In lieu of withholding a straight 5% of the employee's income and making variations for current  
(Continued on page 64)



# RESIDENTIAL AIR CONDITIONING

S E C T I O N



DEVOTED TO HOME AND SMALL COMMERCIAL AIR CONDITIONING

**LIGHT  
WEIGHT**

**STRENGTH**

# A.R.A. SHEETS

*are in the Spotlight*

## DUCTS

You can cut A.R.A. Sheets into panels and fabricate them into duct work by using scrap metal for the corners and joints. The metal pieces can be attached to the A.R.A. Sheets with ordinary sheet metal screws.

## ROUND PIPE

You can roll A.R.A. Sheets on your own rollers into smooth, strong, round pipe. A standard metal seam can be used for the long joint and a sleeve of A.R.A. Sheets or metal can be used for the butt joints.

... because they are doing a difficult job **SUCCESSFULLY**. Used in place of sheet steel, A. R. A. sheets must possess many unusual characteristics—and they do.

These remarkable sheets have a happy balance of strength and light weight. The large A. R. A. sheet 33"x 48" contains 11 square feet—and weighs about 5 pounds. Each sheet passes a Mullen Test (bursting) of over 200 pounds per square inch.

This is why A. R. A. Sheets are easy to handle, cut and fabricate, and still are very strong—strong enough to withstand rough handling in transit, in stock and on the job.

In the Heating and Ventilating field, Popular Approval and Demand are keeping A. R. A. Sheets in the Spotlight.

## A. R. A. SHEETS ARE A FULL AND UNLIMITED SUBSTITUTE FOR SHEET METAL

Asbestos clad A. R. A. sheets are tough yet flexible—rigid but not brittle—fire-proofed and water-proofed—will not dry out, crack, crumble, or chip, have a high insulating value (K, 45 B. T. U.) and good sound-deadening properties. They are easy to handle, will bend without breaking and can be rolled, punched, scored and die cut, still retaining their rigidity and strength.

Write for our free 16-page booklet No. 89 just off the press. Gives full information on A-R-A Sheets. Gladly sent on request.

**Get Genuine  
A.R.A. sheets  
from  
your jobber**

## FITTINGS

Right in your own shop and with your own tools you can completely fabricate A.R.A. Sheets into fittings using no sheet metal.

## FITTINGS

Intricate and complicated fittings can be easily fabricated in your own shop using a minimum of metal. A.R.A. Sheets can be die cut, notched, creased, scored and bent.

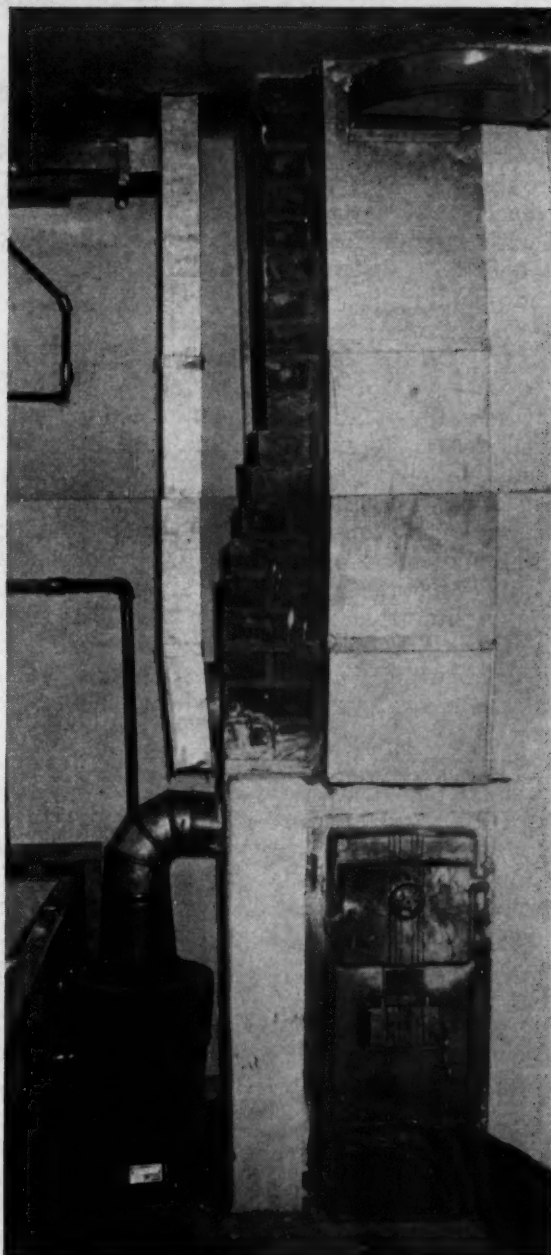
## DUCTS

By "setting" your brake to allow the 3/16" thickness of A.R.A. Sheet you can fold or bend at right angles to form small one-piece ducts. A preformed metal seam may be used for the long joint or the butt joints.

## THE PACKAGE

A.R.A. Sheets are shipped in an easy-to-handle carton weighing about 100 lbs. There are 20 Sheets 33" wide x 48" or 40 Sheets 16 1/2" wide x 48" packed to a carton.





Above—Exterior of typical Detroit, one-story, two-family war worker house with two furnaces-in-the-chimney. Left—Composite photograph of typical installation in one-story house before ducts were streamlined for lower resistance.

Below—Outside brick chimney—inside refractory firebox before grates are set and front attached.

## Furnace In-The-Chimney

The original designer of the system is M. L. Mueller of Seattle, Washington, who has assigned certain patent rights to the Detroit Lubricator Company.

The Detroit Lubricator Company, in collaboration with National Housing Agencies, has in an engineering capacity developed this heating system to a production design.

The Round Oak Company of Dowagiac, Michigan, holds a license to manufacture and sell the system under Round Oak's trade name "FLUE-MASTER." Sale and distribution in the Detroit and part of Michigan areas is through The Chim-

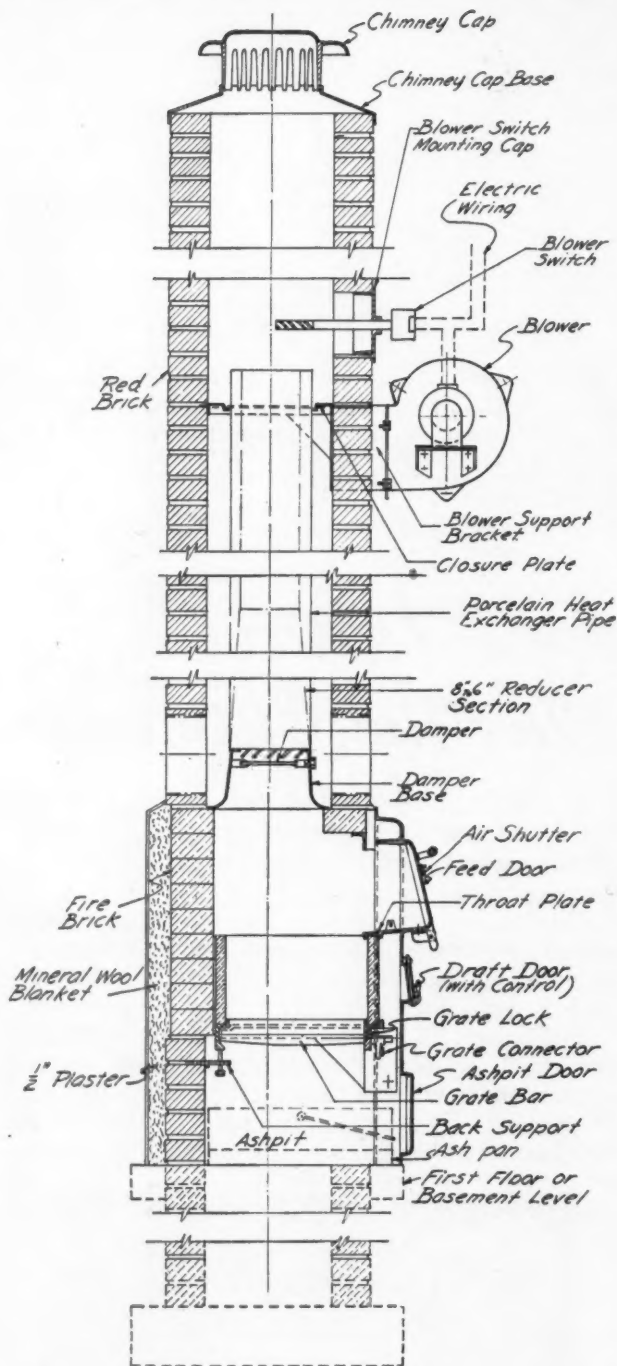
IN several issues of *American Artisan* during the last six months, reference has been made to the "furnace-in-the-chimney" type of heating unit developed especially for low-cost, defense worker houses.

Revolutionary in design and radical in application, this furnace-in-the-chimney heater appeared to the technical staffs of the National Housing Agencies to meet the War Production Board's insistence that heating of war workers' homes should require a minimum of critical material.

The necessity of saving material requires a willingness on the part of our industry to depart completely from all our conceptions of a furnace and its installation.

These furnaces have been installed in large numbers in certain areas where volume house construction is under way. One such area is Detroit and its suburbs, where the distributor of the furnace, The Chimney Furnace Company of Michigan, R. S. Beale, owner, has installed several hundred of these furnaces in new houses.





Cross-section showing grates, front, fan, fan switch, damper and metal heat exchanger flue.

ney Furnace Company of Michigan. As the arrangement operates, Mr. Beale or his salesman sells the idea of this type of furnace to the builder of the houses.

The furnace is installed and the ducts are fabricated and erected by a Detroit area furnace dealer—usually in several dozen houses as a group operation. The installing dealer gets his material costs and profit and his fabricating and installation costs plus profit, and in addition, a profit of approximately \$17.00 gross on each furnace. The builder pays about \$85.00 for the furnace; the dealer is charged about \$68.00, to give the \$17.00 profit mentioned.

A typical one-story small house installation as

photographed and shown in the plan requires about 125 to 150 pounds of duct work, and in Detroit this is being fabricated and installed for approximately \$65.00. This is a house without any basement, with the furnace on the first floor and with supply duct work through the first floor hall, and the return system in the attic as shown in the photographs.

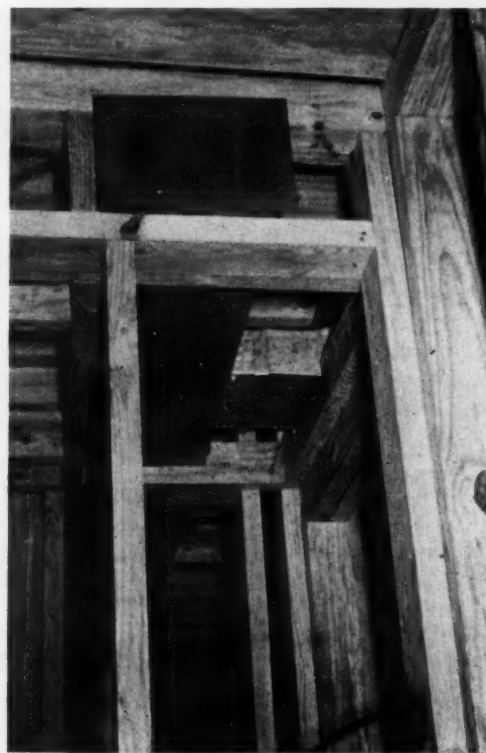
#### Warm Air Distribution System

In these Detroit installations, heated air is delivered from the masonry chimney at a level immediately above the combustion chamber. This warm air is delivered either directly to the surrounding air or through ducts to remote quarters. At the suggestion of Federal Housing Agencies, in future installations warm air delivery will leave the chimney at an elevation close to the floor. This will utilize the fire box from the furnace as additional wiping area, decreasing the radiant heat and providing increased heat delivery by convection.

The warm air delivery through the masonry chimney is provided by round thimbles or rectangular elbows to which are connected ducts—properly sized—which rise vertically to the ceiling or horizontally through adjacent walls to an adjoining room. From the riser duct to remote quarters, horizontal duct carries heated air as shown in photograph.

The size and amount of duct work is about the same as the usual upright first floor furnace.

An undesirable feature of the system now being rectified by low resistance, streamlined fit-



Horizontal supply duct from vertical stack runs through the hall to remote rooms. (One-story house.)



tings is the use of the thimble which opens into upright duct, thus making one flat, shallow and 90-degree turn which probably makes a resistance equivalent to 20 to 30 feet of straight pipe.

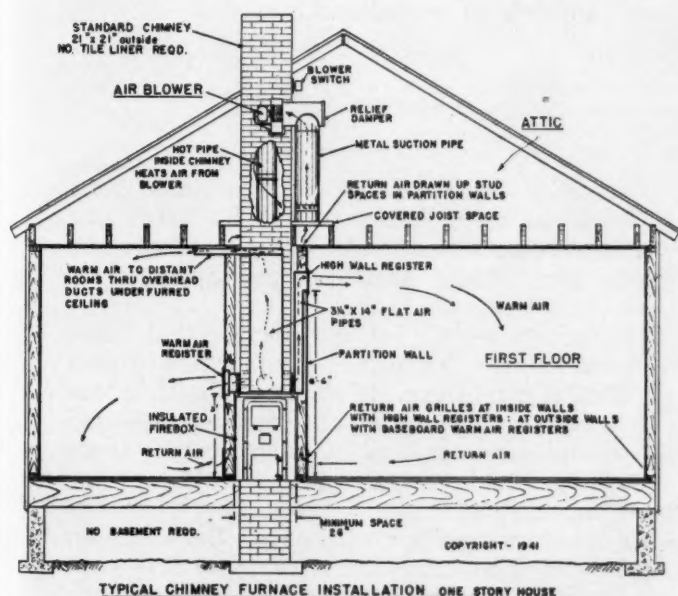
If the warm air branches travel through the attic, they are insulated, and a stub branch comes down through a partition through a high side wall register.

Further to conserve metal, the cold air system consists of grilles at the base board fitted into a lined stud space. The top of the stud space connects with a cold air return branch, which branch utilizes either selected pairs of covered joists or transversely to the joists through a fabricated wooden duct connecting with the suction side of the blower. (See photograph.)

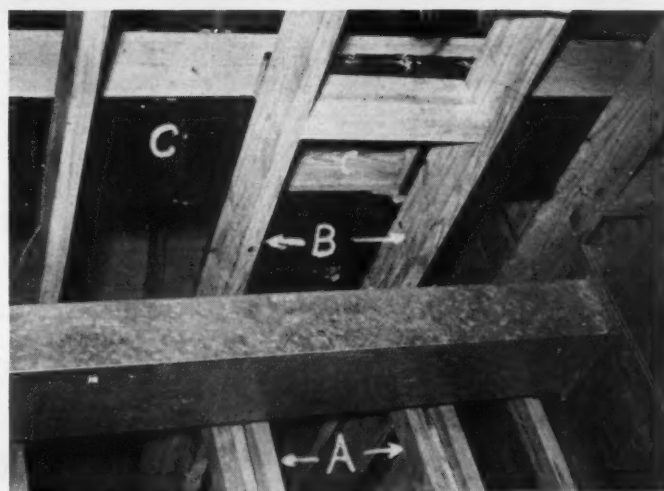
The return cold air duct is built of wood sides (1x10 or 1x12 boards) with a top and bottom of some type of insulating board nailed to the wood sides without any stripping. Usually the collecting cold airs run with the joists and are panned, while the main collecting cold air pipe runs across joists and is the full box described. The fan intake connects with this main return air collecting main.

#### The Masonry Furnace

The photographs of the furnace proper show the masonry chimney which forms the casing of the furnace. Inside the chimney, a combustion chamber or fire box is built of refractory brick to give a 3-inch space on both sides and the back. The grates are supported on special brackets, bedded in the masonry at the back and attached to the front. The front, with ash pit door, firing door, draft door, is metal and comes as one piece, which is bolted in place by bolts fastened into the masonry.



Schematic diagram of warm air flow through one-story house with returns on inside partitions and supplies in high side wall. See photographs above for typical return air system.



Unlined stud space (A) with return grille at baseboard empties into panned joist space header (B) and collects into main return duct (C) running across joists to fan suction pipe.

Masonry work in the jobs photographed required careful supervision in order that the inside surface of the chimney should be smooth, with all joints struck and the space around the combustion chamber left clean of debris. Experiments are being carried on to provide a precast combustion chamber which when adopted will facilitate clean installations.

#### Operating Cycle and Data

In operation, heat is obtained by blowing air down from the fan. This return air is heated by radiation and convection from the enamel flue. The fan is located just under the roof as shown in drawing and photograph. The fastening plate is mortared into the masonry as the chimney is built. Another opening is provided for the fan control which starts and stops the fan at pre-selected flue gas temperatures. The fan switch is generally set to start fan operation at flue gas temperature of 225 degrees and to break fan circuit at a flue gas temperature of 175 degrees. This setting can be regulated to meet minimum register temperatures of delivered air.

Control of combustion during the emergency is manual. Following the emergency, thermostatically operated draft control may be available.

This furnace is rated 30,000 to 60,000 B.T.U. output at the furnace, but in laboratory operation utilizing no more than ordinary existing natural draft, 100,000 B.T.U.'s have been produced with an approximate 10-pound combustion rate.

Under normal combustion rates, the temperature of the flue gases at the fan level is approximately 450 degrees or under. In houses of the type photographed, the register temperature runs from 120 degrees to 140 degrees. Total air delivery at the registers is about 540 C.F.M.

The fuel bed in the units examined was approximately 10 inches in vertical depth, probably a little higher than practice in bituminous coal and a little under that normally employed in anthracite. In view of similarity of construction, it is

(Continued on page 74)



### STOP FUEL WASTE BY-



REMOVING ASHES from the pit. Allowing them to accumulate shuts off the draft and may result in burned-out grates.

### STOP FUEL WASTE BY-



REMOVING FURNITURE blocking return air grilles, thus allowing free flow of air back to the furnace.

### STOP FUEL WASTE BY-



SEALING ALL joints in return and warm air ducts with strips of asbestos paper.

## "Stop Fuel Waste" Campaign in Sketches

One of the toughest problems facing fuel oil rationing boards is to explain to owners how small simple precautions—cumulatively—may make the home comfortable with reduced oil. This series of sketches, running in the Kansas City Star, shows these "little savings" far better than hundreds of words and much conversation.

KANSAS CITY, like many other localities in the Midwest oil burning area, is having its troubles with conversion from oil to coal and is finding home owners surprisingly ignorant of the many "little" things which can be done at small expense to stretch the oil ration and to keep the occupants comfortable at lower temperatures.

In Kansas City, E. K. Campbell, well known member of the ASH&VE and the heating industry, is serving as chairman of the ASH&VE committee which is assisting rationing boards and helping users with their conversion problems. To get the message of the "little" things across to owners, the Kansas City Star's help was solicited and the newspaper cooperated by assigning a reporter and a staff artist to write and draw small sketches which convey a message at a glance.

Several of these sketches are reproduced here. It should be noted that each sketch conveys just one idea—each a simple idea; easy to adopt; and inexpensive. These sketches have appeared at frequent intervals.

We haven't asked, but we assume that these sketches may be "borrowed" by other newspapers for similar campaigns. If warm air heating contractors are serving as advisors to rationing boards or are members of such boards, these sketches might be called to the attention of the local paper.

Contractors might use some of the ideas on letters mailed to customers offering services such as cleaning. If you like any of the sketches, ask the Star.

In transmitting the sketches, Mr. Campbell





**STOP FUEL WASTE BY—**

USING STRIPS of cotton batting to stop air leaks around window frames. Wedge the cotton, ordinary quilt batting, in with a thin, sharp stick or putty knife.



**STOP FUEL WASTE BY—**

SEALING TIGHTLY with adhesive tape all unused windows. Cellulose tape, if you can obtain it, makes for a more esthetic job. Weatherstripping also will save heat.



**STOP FUEL WASTE BY—**

CLEANING FURNACE PIPE. Soot impairs furnace combustion efficiency. Keep pipe and chimney clean.



**STOP FUEL WASTE BY—**

MAKING SURE attic hatches or doors close tightly. Heat rises and much may escape. The doors may need to be sealed.



**STOP FUEL WASTE BY—**

BOARDING UP a fireplace not in use. It should be properly sealed or the dampers should be closed tightly to prevent loss of heat up the chimney. Many fireplaces have no dampers.



**STOP FUEL WASTE BY—**

MOVING OUT of unnecessary rooms; particularly those with many windows, such as sunrooms. Seal these rooms after making sure water pipes and radiators have been properly disconnected and drained to prevent damage by freezing.



**STOP FUEL WASTE BY—**

NOT STANDING and talking in the open doorway. Even under ordinary conditions there is an approximate 26 per cent heat loss through windows and doors.

This is the first of a series of suggestions on how householders may more effectively participate in the fuel conservation program. The suggestions have been taken from a list prepared by the American Society of Heating and Ventilating Engineers.



**STOP FUEL WASTE BY—**

WEARING ENOUGH CLOTHES. The first step in conserving fuel is to lower house temperatures. The thermometer should never read above 70 degrees. In fact, 68 to 70 degrees is the most healthful temperature. In general, for each degree indoor daytime temperature is reduced, a fuel saving of 2.7 per cent will result.

A Kansas City Star staff artist drew these sketches with the advice of E. K. Campbell, ASH&VE, and member of a rationing board. If you can use any of these, write the newspaper or to Mr. Campbell (we'll furnish address). Perhaps your local newspaper will be interested.

points out one fact that is becoming evident from testimony submitted to various government investigating bodies—that in some areas (Kansas City is one) on account of the very free use of oil and gas, both plentiful, there has never been sufficient coal mining to carry the entire load and the attempt to compel large users of oil to convert to coal might easily result in a coal shortage while oil still remains plentiful.

As a member of a rationing board, Mr. Campbell is finding a considerable saving in oil consumption per degree day by some users but, at the same time, many owners are using more oil this year than they used last year—again on a degree day basis. A major activity of his board, as a result, has been giving back to users oil which was denied under the original rationing.

# CO<sub>2</sub> + Stack Temperature Shows Efficiency

By O. M. Elliott and W. S. Hobbs  
Sun Oil Company

KEEP  
em  
ATING

ALMOST everyone knows that smoke indicates fuel waste, whether coal or oil is being used. However, it is not so generally understood that giving the fire more air than is needed to stop the smoke is in actual practice an even greater fuel thief. It is more difficult to see this loss taking place because with excess air the fire usually burns clean. This excess air for the fire and the air which leaks into the furnace above the fire goes up the chimney at a relatively high temperature, carrying away heat to the outside instead of leaving this heat in the furnace.

Although excess air cannot be observed like smoke, we can measure it indirectly by determining how much the flue-gas carbon dioxide content has been diluted. Recent simplifications in carbon

dioxide testing equipment fortunately have made it possible for any oil-burner service man to make a quick check of the flue-gas carbon dioxide content, and many service men are already equipped with inexpensive instruments to do this.

When the flue-gas temperature and carbon dioxide content are both measured, the amount of fuel wasted by oil burners operating with clean fires can be calculated. The chart shown has been prepared to simplify this calculation and to make it easier to interpret the test results.

The chart shows the magnitude of avoidable oil waste due to excess air and brings to your attention that there is much more to efficient oil burner operation than looking at the fire to see if it is burning clean.

CAUSE OF WASTE	EVIDENCE OF WASTE	CORRECTION OF WASTE
THE FOLLOWING THREE ITEMS ARE CHECKED BY THE CHART ON THE FOLLOWING PAGE:		
1. Excess air for fire.	Low carbon dioxide at top of furnace firebox.	Reduce air to burner as much as possible without making smoke and soot. Match air mixing nozzles with oil atomizing nozzle for gun-type burners. Check firebox size and insulation and rebuild if necessary.
2. Air leaks into furnace above firebox.	Lower carbon dioxide at furnace smoke pipe connection than at top of firebox. These air leaks may be found by going over the entire furnace with a lighted candle to find where the candle flame is sucked in.	Seal all unnecessary air leaks with suitable cement. Then recheck with lighted candle. Keep fire door tightly closed. Seal with cement all furnace doors which show evidence of air leaks.
3. Excessive temperature at furnace smoke pipe connection.	Dirty furnace heat transfer surfaces. Flue gas temperature above 500° F. to 600° F. at furnace smoke pipe connection between furnace and draft regulators.	Clean furnace. Have service man reduce firing rate if practical. Improve distribution of hot gases through furnace, if practical. Increase furnace heat transfer surface if possible.
THE FOLLOWING TWO ITEMS COVER ADDITIONAL FURNACE WASTES:		
1. Fuel not completely burned.	Dirty or smoke fire. Excessive soot deposits. Unburned oil vapors leaving furnace. Carbon monoxide in flue gas.	Check grade of fuel oil to determine suitability for burner. Use correct grade of oil or rebuild burner and firebox to suit grade of oil being used.
2. Excessive draft.	Draft measurements. Unsuitable draft regulating equipment.	Adjust draft regulator or install suitable draft regulator and adjust.
THE FOLLOWING THREE ITEMS COVER FUEL HEAT LOSSES BEYOND FURNACE:		
1. More fresh air than necessary entering heated rooms.	Fireplace flues left open. Cracks around windows and outside doors, and around inside doors to rooms where windows are open.	Keep fireplace flues closed when oil burner is in operation. Install weather stripping on windows and doors and seal cracks and openings. Keep windows and doors closed except for necessary ventilation. The colder the weather the smaller the window opening required for adequate ventilation.
2. Overheating of any portion of building or house.	Hot radiators in unused rooms. Temperature higher than use of room requires.	Reduce heat to each room being heated in excess of actual requirements. This may be done by partly closing radiator valves or hot air ducts, or by partly covering radiators or hot air grills.
3. Building or house unsuitable for efficient heating.	Poor construction. Poor maintenance.	Plug air leaks with suitable material. Insulate house and install storm windows, if possible.



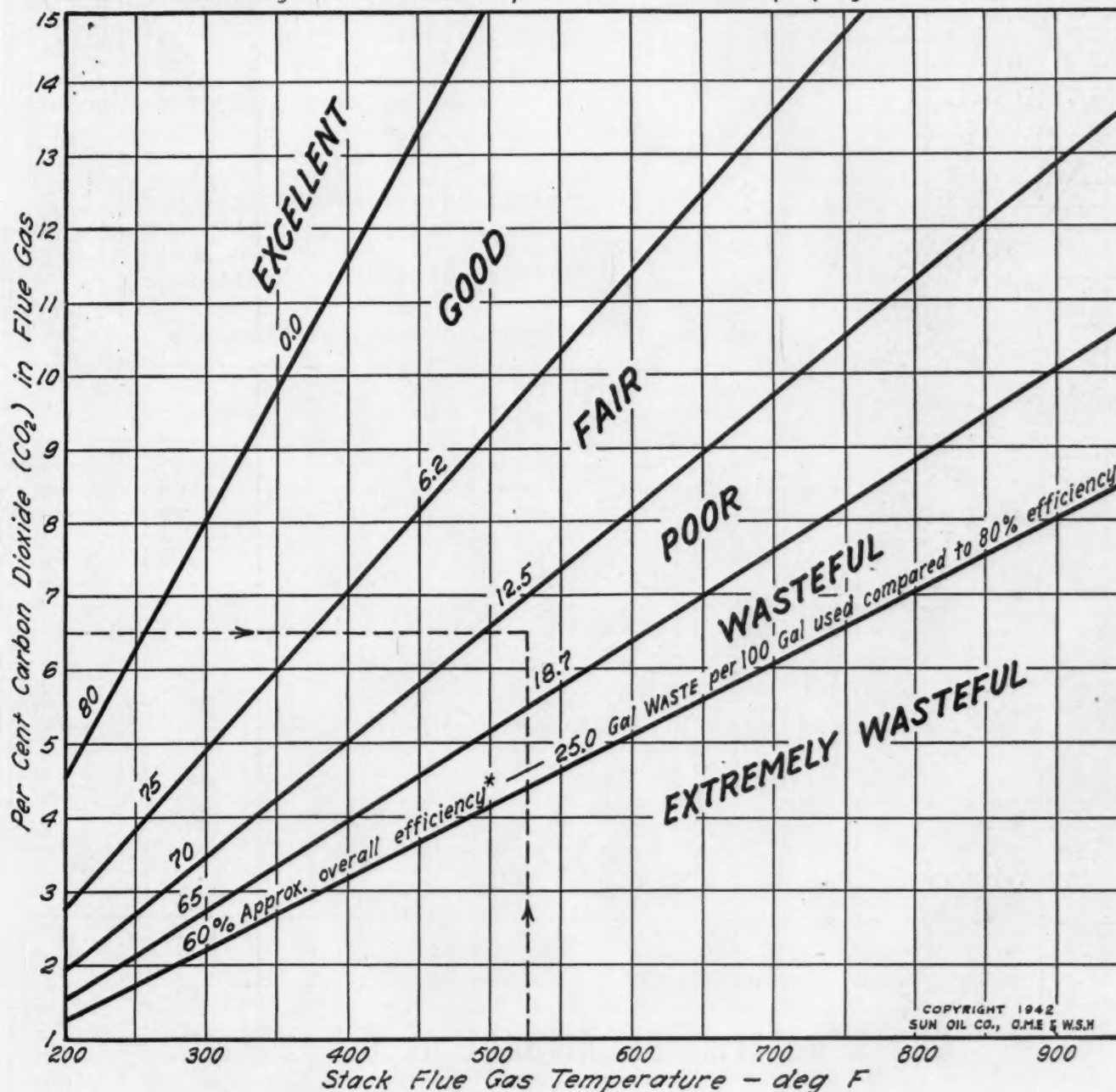
Not all oil burner installations can be brought into the "Excellent" or even into the "Good" efficiency range by making a simple adjustment. Tests have shown that many oil heating plants, some because of poor design and others due to improper selection or combination of burner and furnace, cannot be adjusted to operate efficiently as they should. However, necessary equipment for improving many of these heating systems has been made available under priority rulings. Anyone can seal up unnecessary air leaks into the

furnace and keep the furnace doors tightly closed—all of which saves fuel.

If every heating contractor or his service man will check each item in the following table and make appropriate corrections, it is estimated that national fuel oil requirements would be reduced more than 20 per cent! Even greater savings are possible with insulation and with the reduction of indoor temperature and ventilation to actual needs for health.



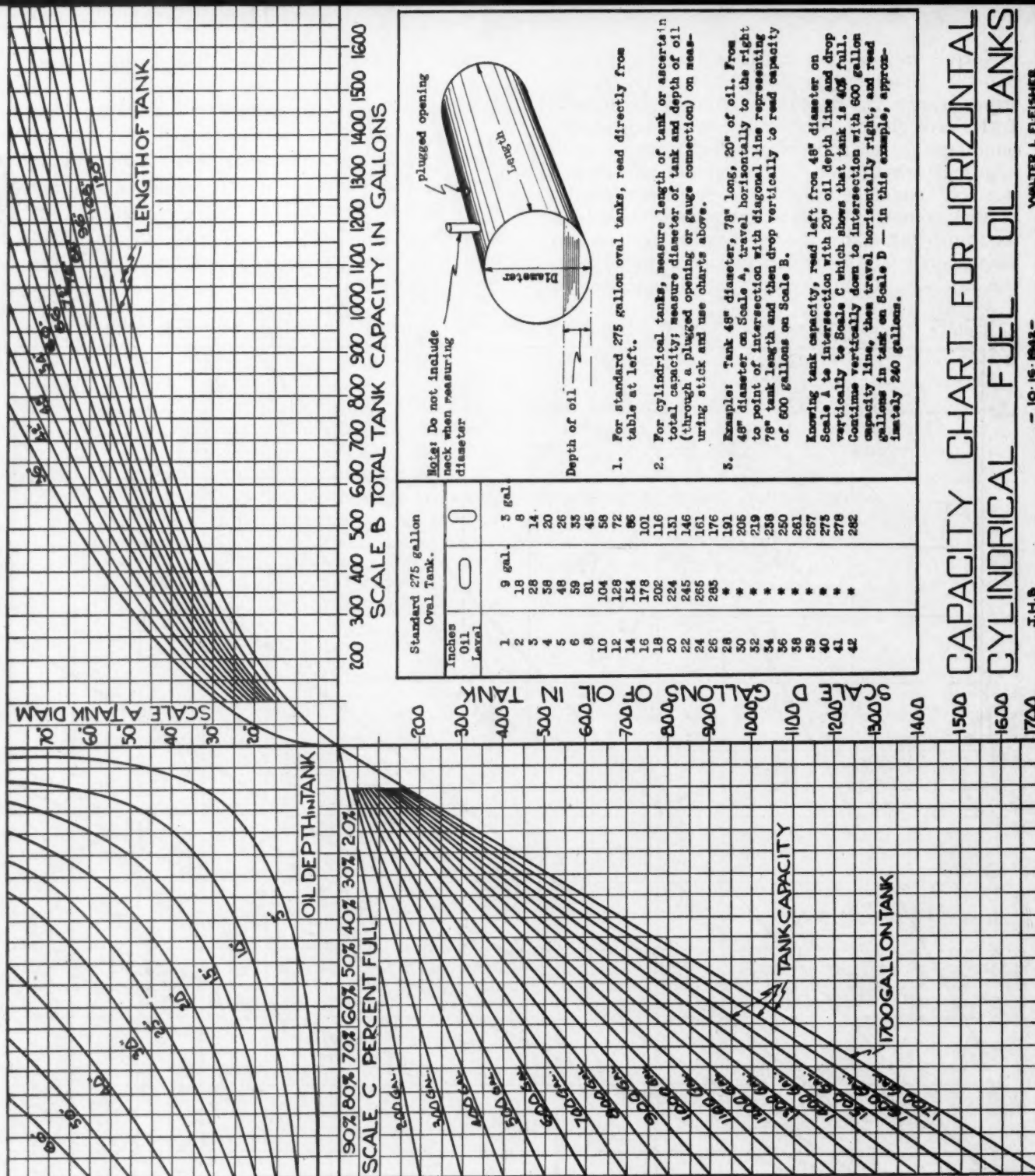
Chart for Estimating Fuel Oil Wasted by Inefficient Furnaces Operating with Clean Fires.



\*NOTE: Includes a 7% "hydrogen moisture loss" and a 5% "radiation and unaccounted for loss".

#### EXAMPLE

6.5% carbon dioxide ( $CO_2$ ) in flue gas; 525 F flue gas temperature  
Approximate OIL WASTE = 14 Gal out of each 100 Gal compared to 80 % Eff.



**CAPACITY CHART FOR HORIZONTAL CYLINDRICAL FUEL OIL TANKS**

**WALTER L. FLEISHER**

**- 10-16-1943 -**

**I.H.S.**

## Chart Determines Amount of Oil in Tank

ON ANOTHER page in this section, a chart by T. L. Condon shows and explains how a fuel oil user can judge if he is burning oil faster than he should for the allotted gallonage for the period. To make the calculation by the Condon graph the user must know how much oil he had

in his tank before October 1, how much oil has been bought since, and how much oil is in the tank when the check is made.

Gallons on hand before October 1 can be obtained from the supplier or estimated; or how much oil has been bought since can be found from



supplier, but to know how his consumption is keeping pace with allotted gallonage, some method for actually measuring the oil in the tank at a given period is necessary.

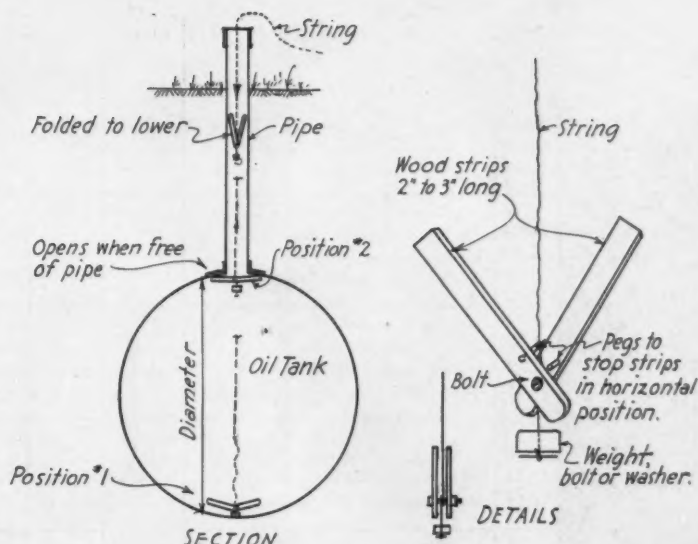
Few persons know how to calculate gallons a tank will hold or how to estimate the number of gallons in a tank partly full. But this information has been charted so that, with a ruler, the gallons the tank will hold and how many gallons are in the tank can be picked off the chart. This chart is shown facing.

This chart was devised by Walter L. Fleisher, New York consulting engineer and member of the War Service Committee of the American Society of Heating and Ventilating Engineers.

By the use of a folding six-foot rule it is usually possible to measure the depth of oil in a tank by measuring through the plugged opening in the top of most tanks. A pretty good approximation can be made by thumping on the end of the tank to find the oil level.

The explanation of the step-by-step procedure for use of the chart is shown on the chart itself.

Many inside, oval tanks have meters showing gallons in the tank and this reading can be used. But outside tanks and the combinations of "50-gallon drums" so common among small users frequently do not have a meter, but can be read by the chart. If the tank can be measured, the chart is directly usable. But if the tank is buried, about the only way to determine the capacity is get



the capacity in gallons or the dimensions of the tank from the man who installed it.

If you know the capacity but not the dimensions of the buried tank, there is a method for determining the diameter through the filler pipe. A rough sketch shows an easily made "gadget" which will do the trick if the filler pipe is straight. Having found the diameter, then the length of the tank can be found by working the Tank Capacity chart backwards. Having both diameter and capacity, the Oil Depth chart can then be used, and the length will be a check on the capacity.

## Chart Shows If Oil Consumption Is in Step with Period Rations

[Chart published by permission of T. L. Condron, Author]

**M**ANY fuel oil applicants did not understand the question about "how much oil they had on hand Oct. 1, 1942, or on the date of their application" because of the involved wording of that question. Also, the inquiry as whether the applicant had bought oil after Oct. 1, 1942, did not require the applicant to give the date or dates of such purchases, if any, but only the name of the supplier and number of gallons supplied.

In many instances the applicant had put in his tank one or two hundred gallons, or in some cases even more oil just prior to his measuring "oil on hand" so as to fill out his questionnaire. Consequently, in determining the quantity of oil coupons to be allotted him, it frequently happened that he received coupons for a considerable less number of gallons than were due him under his determined ratio.

Another mistake made by a great many applicants was in reporting the square feet of areas rooms, etc., in their homes that required heat.

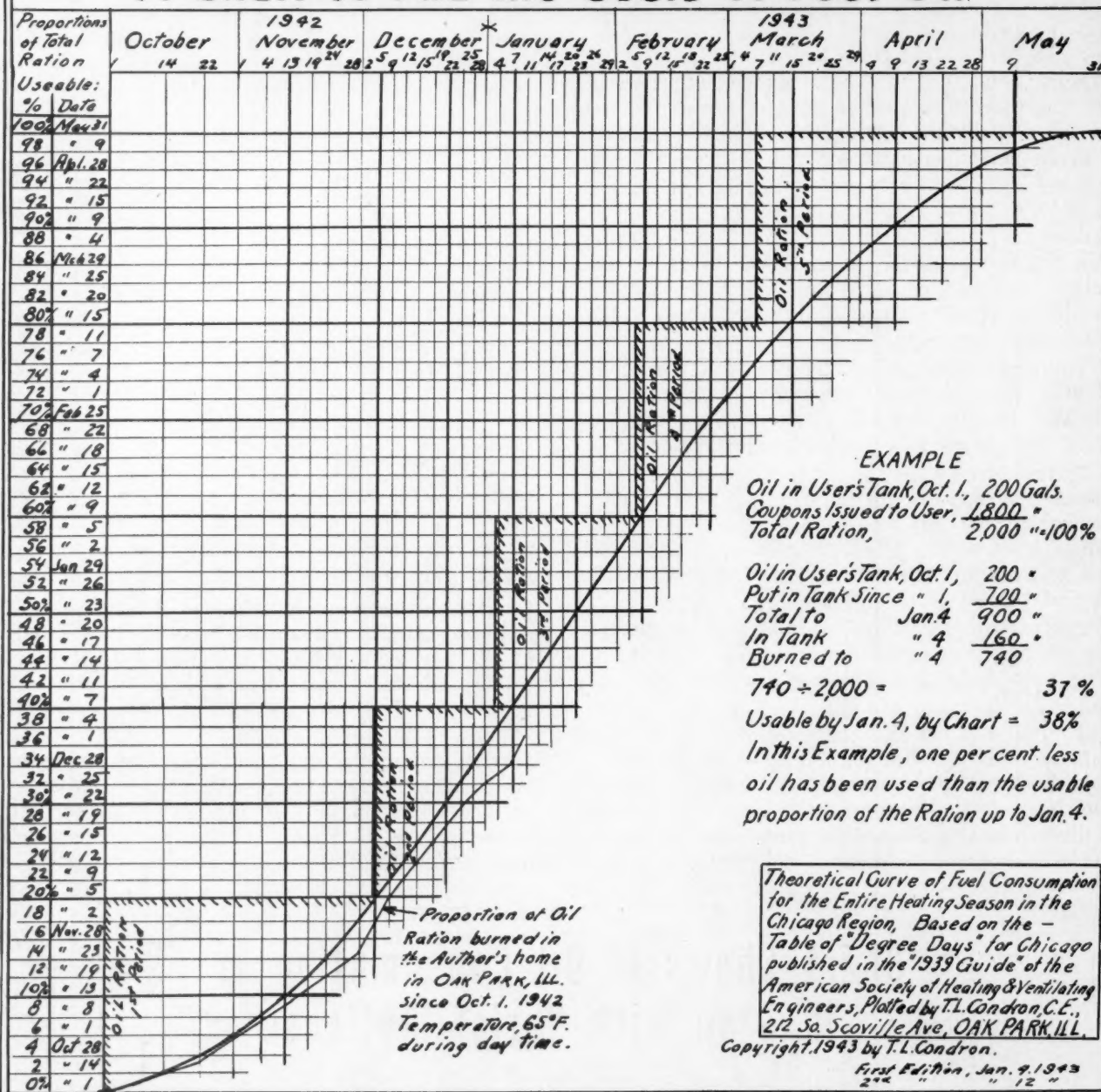
Such errors were made by applicants through unfamiliarity with the somewhat simple procedure of measuring and computing areas. Also, many did not realize that such areas were an important factor. The "amount of oil used last winter" was the important thing to most users and, as last winter was mild, they felt they would need more, rather than less, oil this year if the weather should be colder, as in fact it has been.

Practically no one had ever kept a record of oil burned week by week, but they knew that every so often during the past heating seasons they had had their oil tanks refilled or partially refilled before they became empty.

After getting coupons they became panic stricken because the quantity of oil represented by these coupons was in many instances a cut below what they had burned last year. Few realized that the "inventory of oil on hand Oct. 1, 1942," was a part of this season's ration.

If there had been a serious error in determin-

# A Chart to Aid the Users of Fuel Oil



ing the "inventory of oil on hand Oct. 1, 1942," then it would appear that the user had burned very much more oil up to Jan. 7, 1943, than the 40 per cent of his total ration for the entire heating season. While, if the correct inventory of oil on hand Oct. 1, 1942, was determined, the user's actual quantity of oil burned would be less than figured on an incorrect inventory and he would be entitled to more coupons without any increase in his assigned ration. The same also would be true if an incorrect area was used.

The total ration is equal to the sum of the oil on hand plus the coupons issued. Therefore, if the oil on hand Oct. 1 was less than determined by the Ration Board, the number of coupons issued should be increased, otherwise the total ration would be reduced below what was intended.

Likewise, since the allowed ration is based on the area to be heated as well as the quantity of oil burned last season, any error in reporting either the area to be heated or the quantity of oil burned is liable to reduce the ration allowed.

Most users of fuel oil for heating homes have but a hazy idea of how their oil is holding out. All they know is that they have been using up their coupons so fast that they cannot see how they can keep comfortable for the rest of the heating season. This is even more distressing for those homes where persons are ill or infirm.

To aid users of fuel oil to determine whether they are burning oil at a rate in keeping with their ration or not, the writer has prepared the accompanying chart. By this chart, if one knows the actual amount of his total oil ration and the actual amount of oil he has burned to a given date, he can divide the quantity of oil burned by the quantity of his total ration. This will give him the per cent of his ration burned. By referring to the corresponding percentage given in the left-hand column of the chart he can see whether the date beside that percentage is before or after the date he has used, and thus learn how his oil is holding out.



AMERICAN ARTISAN

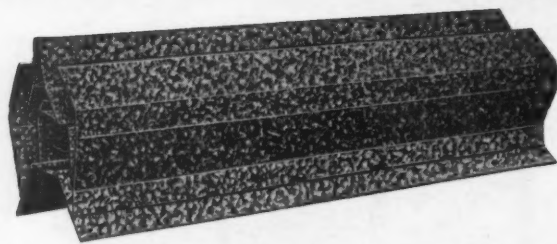
# SHEET METAL

S E C T I O N



DEVOTED TO SHEET METAL CONTRACTING AND FABRICATING

# Your Industrial Customers Need Extra Ventilation for War-Crowded Factory Buildings

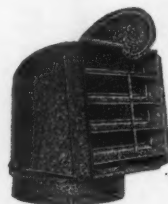


**THE SWARTWOUT-DEXTER HEAT VALVE.** The first continuous type ventilator made. Successfully used for economical air movement in industrial buildings requiring large-scale ventilation. Supplied in standard 10 ft. sections.



## THE SWARTWOUT AIRJECTOR

For peak loads or for ordinary ventilation, the propeller-powered Airjector gives you an unusual method of solving many air movement jobs.



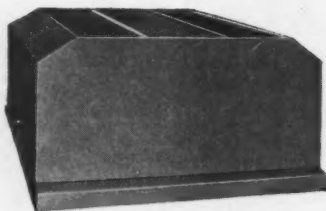
## THE SWARTWOUT ROTARY

Industry's quality ventilator for a third of a century. You can honestly promise more capacity for the size of ventilator used, and lifetime satisfaction.

## Swartwout's Standard Line of Roof Ventilators is Available to Priority Holders

WHILE the use of steel in roof ventilators is prohibited in some types of buildings, it is still possible for war industries working on high priorities to secure the well-known Swartwout low-resistance high-efficiency ventilators — through sheet metal contractors. Many buildings are overcrowded — need additional ventilation badly. Contact your local war industries and secure this profitable business. Write Swartwout for prices and discounts. No obligation, of course.

# The New Swartwout NCM Line Provides Tested and Approved Ventilator Designs in Non-Metallic Materials



## NCM UNIT Heat Valve

For fast removal of heat, smoke and fumes this ventilator can be placed over parts of buildings most needing ventilation. Made in 8 sizes.

FOR YOUR CUSTOMERS requiring ventilators of non-critical materials, Swartwout has developed a complete line of NCM Ventilators (see full announcement in January issue of this publication). These ventilators are patterned after the original Swartwout Line and will enable you to handle any roof ventilating problem, on priorities available for needed maintenance, alterations, etc.

Besides two styles shown, NCM Line includes POWERED Heat Valve and CONTINUOUS Heat Valve. For new Bulletin 217, write to

**THE SWARTWOUT COMPANY**  
18615 Euclid Ave., Cleveland, Ohio



## NCM STATIONARY Ventilator

Made of specially developed material, with outside sand-treated and painted Army drab. Unusually high efficiency under all operating conditions.

# Swartwout VENTILATION SPECIALISTS





## Incendiary Bomb "Snuffer" By Stratford Enright

**O**UT on the West Coast, a popular subject of conversation is "when are they going to start dropping incendiary bombs on us?"

In Beverly Hills three brothers, Christian, Eddy and Irving Marx, who own and operate the Wilshire Sheet Metal Company at 8707 Wilshire Blvd., have invented and are manufacturing an unique, but highly effective shovel with which to combat fire bombs.

The metal part of the shovel that has been trade-named the "Beverly Incendiary Shovel" is shaped like a tapering, open-ended box inside of which is suspended a paper bag containing four pounds of "snuff." The snuff is a specially treated

rock wool insulating material.

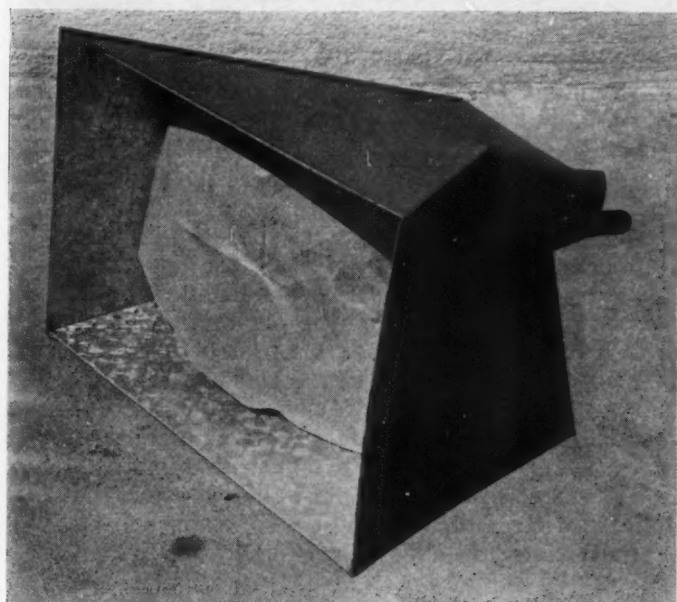
In coping with a fire bomb, the user grasps the handle of the shovel at the far end and approaches the bomb keeping the metal part of the shovel extended in a line between the bomb and his face as shown in the accompanying illustration. Quickly he places the open end of the shovel over the incendiary preventing it from scattering fire about. The heat of the burning magnesium of which the bomb is made burns through the paper bag instantly releasing the snuff which drops onto the bomb and smothers its action.

After the bomb has been covered by the shovel for about two minutes, the shovel is removed, turned over and used as a scoop to remove the remaining hot fragments of the bomb and the scattered snuff.

Fabricated from standard sheet metal and spot-welded, the shovel is light enough to be easily handled by a woman since its total weight of fourteen pounds includes the four pounds of rock wool contained in the paper bag.

The novel shovel is being sold to air raid fire fighting squads as well as to individuals who wish to have equipment immediately available in their own homes to combat fire bombs. It has been used extensively in incendiary-fighting demonstrations before fire wardens and civilian groups on the Pacific Coast and given excellent publicity for the Marx brothers and their sheet metal firm. And the sale of the shovel has proved to be a profitable operation for them, in fact, so profitable that they have applied for a patent for the device.

Likewise they have made application for a priority for the materials required for its production on a large scale.



# Fabricating War Products

## [ *Plane Fuselage, Wings, Beams, Rudder* ]

By Ernest E. Zideck  
Sheet Metal Consulting Engineer

IN PRESENTING this treatise of sheet and allied metal work in the building of the modern war plane, the author is guided principally by the consideration that more and more aircraft will be built during 1943 and that an increasingly larger number of parts comprising the craft will be subcontracted to shops having the tools and personnel with knowledge and experience adaptable to the fabrication, largely by hand, of the hundreds of items that the busy and adequate-help-lacking plane builder even now is forced to farm out.

The accompanying drawings roughly illustrate the parts that can be fabricated, to print and specification, in a progressive sheet metal shop. Aside from the smaller loose pieces, such as reinforcing angles, channels, ribs, longerons, air duct and exhaust pipes, a number of doors and plates, and a multiplicity of uni-radial and raised panels, there are complete sub-assemblies such as the Main Beam, the Wings, the Power Plant Housing, the so-called "flaps," the Fore, the Mid, and the Aft sections of the fuselage, with the Rudder and the Stabilizer assemblies, which are all fabricated of sheet and allied metal, feasible of being made up in the adequately manned and tooled shop.

By adequate manpower we mean at least one or two all-around sheet metal mechanics who read blue prints and are capable of devising simple modes of work and means to do the work with. As above said, the work is, to a large extent, handwork; and aside from the employment in it of hand tools and common sheet metal machines, there is required a special tooling, although the tools may be only hard wood, masonite, or cast forms, over which to do the flanging and diverse shaping of the metal.

### Wing Construction

As seen in Drawing No. 1, the sheet metal covered wing shown consists of two beams, one called the Inter-Beam and the other the Auxiliary Beam, to which are riveted a series of "ribs" constructed of sheet strips formed over blocks of wood or casting. The ribs may be angles or channels, neither of which is difficult to shape with a

steel outside band holding the metal tight against the inner form.

The ribs, angles or channels, whichever are specified (Drawings 1 and 3) serve as "splices" over which the covering panels meet edge to edge, and to which they rivet. Panel riveting is of the countersunk type, with the rivet heads buried in the metal, leaving a smooth surface. Countersunk also are the rivets which hold the ribs to the beams (Drawing No. 2) with the panels riveted tightly against the "splice."

The wing-tip (Drawing No. 1), difficult to form in one piece, usually is put together of two pieces, top and bottom meeting edge to edge, a splice inside being inserted, through which to rivet them together. Or, in many cases the wing tip is made, in above manner, from two pieces of stainless steel, which may be welded together instead of riveted. The use of fabric for covering a large portion of the wing top renders riveting of the panels to the ribs through the open top quite feasible, even though a smooth outside surface is strictly insisted upon.

### Rudder, Stabilizer, Hull Sections

The construction described above and shown in Drawing No. 1 applies, as to ribs and panels, to the Rudder unit and the Stabilizers (Drawing No. 4) and to elevators and "flaps," shown in Drawing No. 5. It also applies to the Fore, Mid, and Aft Hull Sections, only that here the ribs are easier to form and the riveting of ribs to the panels is much simpler because there is an easy approach from the inside of the structures.

These Hull sections, or pre-assembled units ready for the assembly of the plane, are shown in Drawing No. 7. The skeleton structures are composed of channel-like ribs formed to the contour (Drawings No. 6 and 4) and of intersecting channels or extruded duro-aluminum shapes called, in this connection, the longerons (Drawing No. 4). In forming the ribs it is best to work the unnotched strip to its channel-like shape and its contour, rivet the ends by "splicing" on the inside of the channel and make notchouts in the flanges for the longerons afterward (Drawing No. 4). Templets should be used to mark the



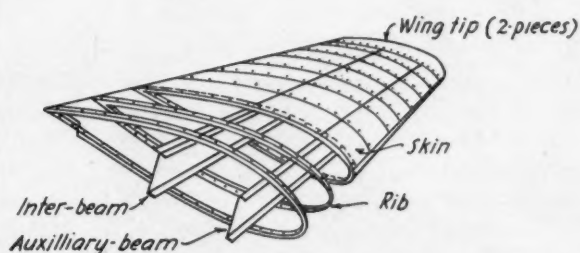
proper places for the notchouts. Riveting the longerons to the series of ribs, countersinking the rivets as described above, gives us a skeleton structure to which the skin panels are riveted, the rib forming the "splice" (Drawing No. 6).

In Drawing No. 5 is shown a "bulkhead," a heavier gage metal plate having a wide enough flange following the contour of the structure at the particular "station" of the ship, to furnish the "splice" for the panels of sections that, in assembly, are riveted through it. The bulkheads at the ends of each section are provided with corresponding holes for bolts or rivets tightening the two sections together. The bulkheads usually hold other parts; the hinges for the Tail Wheel in the Aft Section, for instance, but these other parts the sheet metal fabricator is not concerned with, except possibly that he fabricates the bulk-

heads and provides them with holes for bolts or rivets to hold in position such parts.

In Drawing No. 7 are shown the three fuselage sections with their bulkheads riveted in. The longerons, shown in Drawing No. 6, are solidly riveted to the face of the rib, the rib between the notchouts indented to the thickness of the longeron metal, so that the outside faces of rib and longeron lie tightly against the metal of the panels or "skin." These "joggles" in the ribs it would be best to insert over a hardwood or similar full size form which is provided with grooves into which to "sink" the metal, using hammer and a corresponding tool. But the "joggles" may be profitably inserted, one by one, by a die-set operated in the press brake.

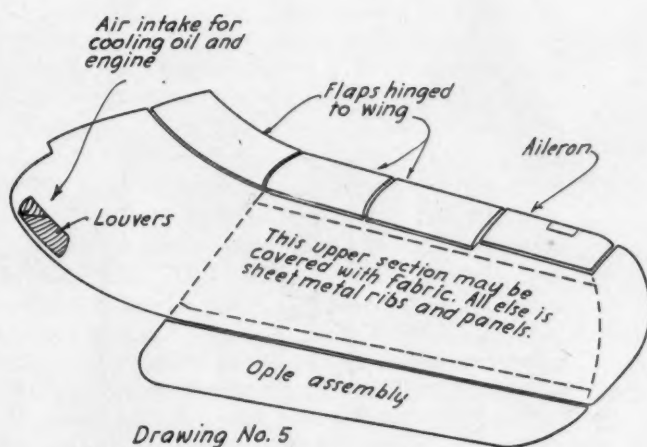
It will be noted viewing the drawings that many of the panels are multi-radial or "raised." These



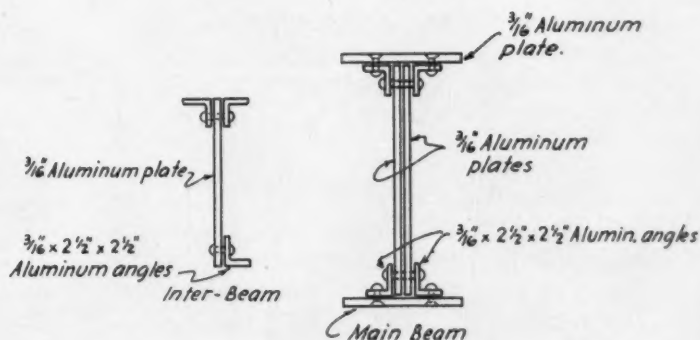
Drawing No. 1  
ALL METAL WING SECTION



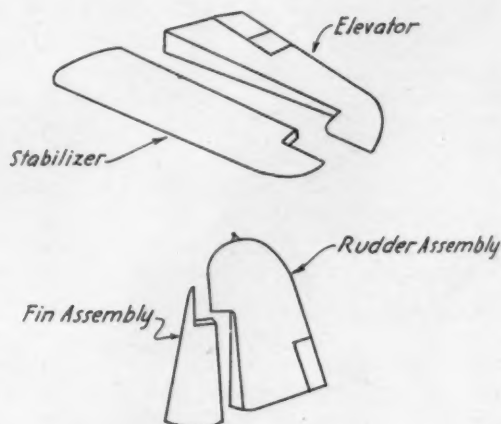
Drawing No. 3  
REINFORCED RIB, WING CONSTRUCTION



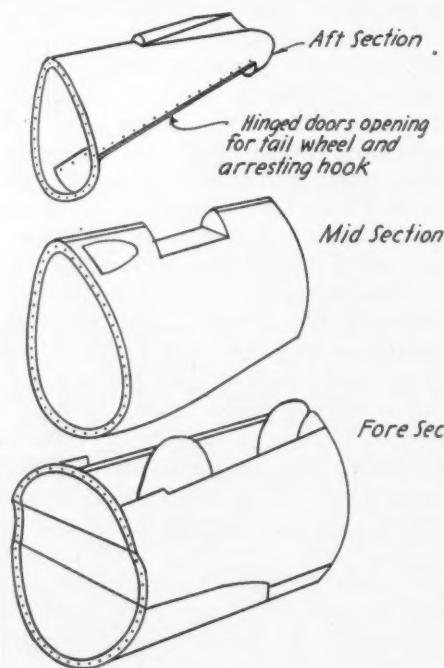
Drawing No. 5  
A WING ASSEMBLED



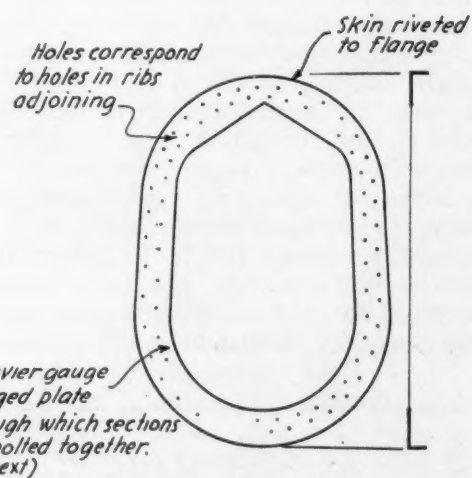
Drawing No. 2  
WING SECTION BEAMS



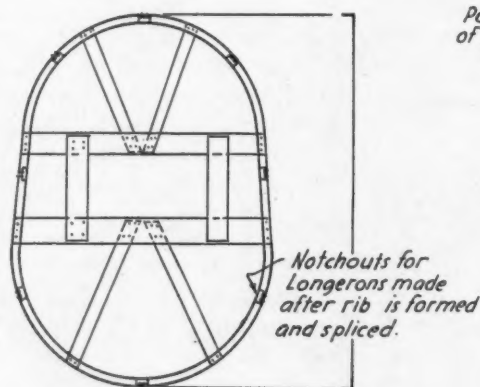
Drawing No. 4  
SHEET METAL CONSTRUCTION



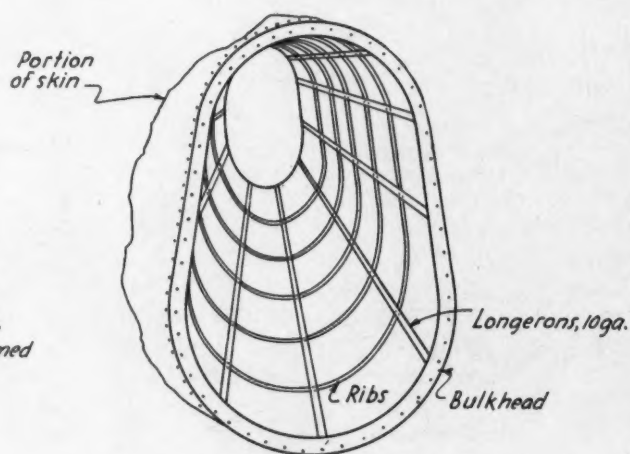
Drawing No. 7  
HULL - PRE-ASSEMBLIES



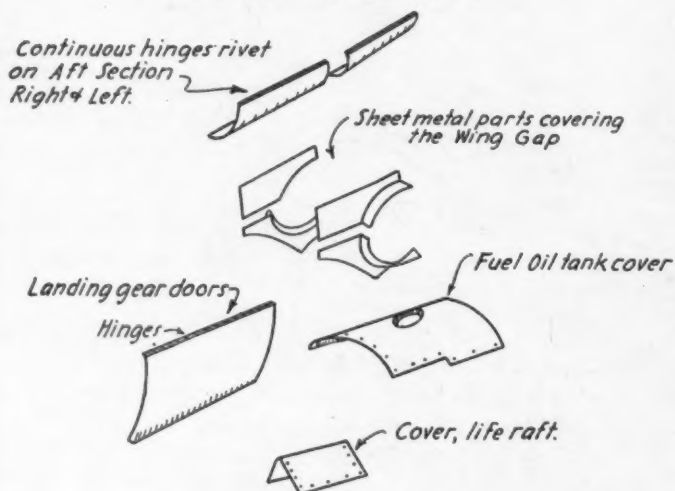
Drawing No. 5  
BULKHEADS



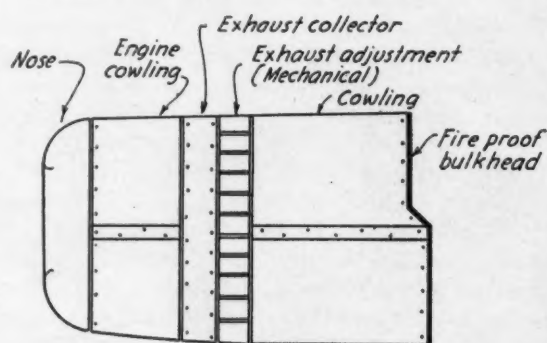
Drawing No. 4  
HULL RIBS AND LONGERONS



Drawing No. 6  
STRUCTURAL FRAMING



Drawing No. 8  
TAIL WHEEL DOORS



Drawing No. 9  
POWER PLANT HOUSING



panels can be formed to the required contour by a variety of means. Drop and power hammers will do the job; the "stretching" machine will do it; but in the absence of these means we might well use the raising hammer, especially so on small size panels. Much of the multi-radial forming, where one radial is small, can be done over wood forms operating in the press brake.

The reinforced rib shown in Drawing No. 3 is rather the rule than the exception. The reinforcing angles or channels, whichever are specified, are brake-formed of semi-hardened aluminum strips, the metal grade being well adapted to its own thickness inside-radius braking.

The reinforcements are riveted to the flange of the rib in advance of using the rib in the structure, but where they would interfere with panel riveting they are left out and attached, one by one, gradually, as the paneling progresses from tip to the inboard end.

#### Assemblies Can Be Sub-contracted

It is well within future possibility that the plane builders will subcontract sheet metal work on pre-assemblies, receiving the wings, for instance, in a semi-finished state, they themselves inserting the castings and the mechanism parts in them. However, the work of erecting the housing—like the building of a house—would still necessitate providing, in the structure, for whatever installations of parts and mechanism are to be done. These provisions the sheet metal fabricator must incorporate and that is where he or his men must understand the prints well, to be able to make necessary provisions while the several components remain in the flat or in an unfinished state. It is extremely difficult to cut or saw or make holes or joggles in the assembled product; by contrast, the provisions for concealed or inaccessible operations, if done in due order of cutting, hole drilling, forming or fitting, can be accomplished easily and in a minimum of time in the flat.

#### Hull Sections

The three plane sections shown in Drawing No. 7, namely, the Fore Section, the Mid Section, and the Aft Section, are structures built entirely of sheet metal ribs, of formed or extruded channels for longerons, and of the covering skin. The Bulkheads alone need to match one another, with the skin fitting tightly over their flanges to which it is riveted, with the rivet heads buried flush within the skin metal. Of the three, the Aft Section presents more exacting work problems in that its bottom part is provided with four sections hinged to the body (Drawing No. 8), operating like doors, opening to admit the descent of the tail wheel and arresting hook, and closing tight after the foregoing has been lifted into the interior of the Section for repose during the ship's flight.

Drawing No. 2 shows the simple construction of the Main Beam, this Beam being the principal

bearer of the load of metal that goes into a plane. It extends from wing to wing, supporting them; to it is fastened the power plant and it carries, on its shoulders, so to speak, the whole structure of the plane, from propeller to the tail.

In many of the larger planes the Main Beam is constructed double, with intervening cross members adding strength to the structure. And yet, in fast craft demanded by our armed forces, unnecessary weight has been eliminated, with the result that the single Beam is coming more and more into use in war planes.

#### Beam Construction

As shown in the drawing, the Beam is constructed of plate and angles, the metal used being duro-aluminum. This metal is light, and it surpasses steel in strength. In this state it cannot be braked, and that is why flat plates, twenty and more feet long, and bandsawed or "routed" to the given shape, are being used. With the angles and the top and bottom plates riveted together, the Beam is then reinforced by vertical cross channels connecting the top and the bottom plates.

The "Inter-Beam" shown in the same drawing is of similar construction.

The series of Ribs carried by the Inter-Beam and one auxiliary beam, the Ribs reinforced by cross-channels riveted to the flanges of the ribs (Drawing No. 1) form the skeleton structure of the wing.

#### Planes Need Much Hand Work

Aircraft sheet metal work, owing to the rapidly changing designs of the craft, continues to be largely hand work.

True, in the plane factories there are employed a great variety of drop hammer and mechanical dies; also forms operating on rubber in a hydro press and steel forms operating in the stretcher. But the formed or impressed pieces must still be trimmed to size. And much hand work is necessary to correct the shapes of the not always correctly or fully formed parts. The correcting by hand is predominantly on rubber-formed parts because the rubber pad will not make sharp enough impressions and flange fully to ninety degrees. Another operation requiring correcting by hand arises from annealing the metal after its leaving the press, the heat-treatment disfiguring the formature. So that, after all, the man versed in working sheet metal, by hand if necessary, is apt to accomplish better results in his own smaller shop than are evident in the machinery-overloaded aircraft factories lacking the experienced help.

In Drawing No. 9 are shown sheet metal parts comprising the housing for the power plant and connecting unto the Main Beam and the Fore Section of the plane. These parts are bolted one to the other to permit access to the engine unit by removing a few of the bolts. They are the Nose, the Engine Cowling, the Flap-bearing unit,

(Continued on page 68)





# Air Blast Drying Ovens For Aircraft Landing Mats

Air heated electrically by bar elements and circulated by pressure fans throughout a tight fitting, heavily insulated oven, dries 2600 pounds of freshly painted aircraft landing mats in 15 minutes. The drawing facing shows details.

**S**HEET metal fabricators who have visited WPB's subcontracting displays probably have seen the perforated and embossed airplane landing mats which have been manufactured in large quantities by numerous heavy fabricators. The mat sections measure approximately 1½-feet wide by 12 feet long. The final step in production calls for painting.

Several methods have been tried to speed the drying of the finish—infra-red, bake oven, electric oven, etc., but a drying system worked out by Banner Heating Company of Youngstown, Ohio in conjunction with a fabricator is interesting because with this method 40 pieces weighing 2600 pounds can be thoroughly dried in 15 minutes.

The system devised uses electric heat in the ovens shown in the drawing. Each oven gets about 136,000 Btu of heat produced by 40 KW of electric power. The interesting feature of the method centers around rapid and uniform distribution of air within each oven. The drawing shows that each oven in the four-oven battery has a pressure fan which puts 1440 cfm of air through the oven. Uniform distribution of the air in the oven is obtained by spreading entering air evenly across the bottom of the oven by means of directional louvers (see interior detail).

The painted mats are immersed in the oven stacked and spaced—with each mat held away from adjoining mats by a spacer arrangement. A metal shipping strap is wrapped around each bundle after drying. Thus when a bundle of mats is lowered into the oven, the air under pressure works through the bundle drying all surfaces uniformly. Rapid drying is also aided by mixing one barrel of paint with one barrel of dryer. The paint in the tank is kept mixed at all times by a circulating pump.

Air is withdrawn from each pair of ovens by an exhaust fan which removes a total of 1550 cfm or 725 cfm from each oven. Thus the oven is under some pressure during the drying period.

During the drying period the oven is kept at about 225 degrees F. by a thermostat which controls the heating elements. Each oven is capable of producing an inside temperature of 350 degrees

maximum, but the 225 degrees has been found sufficient. Further to reduce the drying time painting is done at about 100 degree temperature so that the mats enter the oven about 100 degrees. This reduces the heating up time of the bundle in the oven.

Air from the pressure blowers comes from the inside of the building which is open mill construction, hence the small volume used by the fans is not a serious problem. Exhaust air laden with fumes and paint evaporation is exhausted as shown through a stack to the outdoors.

The ovens are sunk in the ground as shown to lower the working level and also to insulate. The mat fabricator built the ovens (his business is heavy metal fabricating) but the tanks were insulated and the forced air systems were designed and installed by Banner. A local electrical contractor installed and wired the heating elements.

In order to charge an oven and reduce the time required to open the oven and insert the bundle and close the oven, a loose lid top was devised by Banner (see elevation) hinging the lid and making a wedge type seal. By this arrangement the lids can be flipped open to remove a bundle and shut quickly. The charging can be as rapid so that through one complete drying cycle little heat is lost by opening an oven.

As the drawings show, the lid and the outside wall of the battery are insulated with 4 inches of mineral wool. The space between the tanks is also provided with angles at 23-inch intervals so that 4-inch bats of mineral wool are supported and tied around the ovens.

Above the ground, and below the level of the lids, a working platform was built so that the bundles can be guided by hand into and out of the tank. A traveling crane brings the bundles to the battery and lowers the bundles into the ovens. After being dried, the bundles are again taken by the crane and hoisted into waiting cars. No time is lost, a minimum of working space for drying is required, and one 15-minute drying period makes the bundles ready for shipment.

# A Costing and Incentive Method For Shop Welding Operations\* [ Part 1 ]

By Virgil Cochran

Assistant to Superintendent, Le Tourneau Co., of Georgia

**T**HIS report is a case study of the cost accounting system in a plant where the Bedaux system of labor cost control has been adopted. Its main purpose is to describe the procedures now being followed and to interpret them by describing a cost system consistent with the Bedaux plan and adopted to the needs of this particular company.

To understand this report it is necessary to know something about the plant where this system has been installed. R. G. LeTourneau, Inc., is a manufacturer of heavy grading equipment with its plant in Peoria, Ill. It employs about 1,000 hourly workers, of which number approximately 75 per cent may be classed as production workers. The principal products are scrapers, angledozers, bulldozers, rooters, cranes, and cable control units, nearly all of which are of electrically welded all-steel construction. The work in the plant, therefore, is largely one of steel fabrication. There are no cast parts, everything being fabricated from raw steel which is received from the steel mills as angles, bars, plates and rounds. In the machine shop there are a substantial number of production lathes, punches, drill presses, grinders and gear machines.

It is not the scope of this article to describe all of the details of the Chas. E. Bedaux wage incentive system but it is necessary that the "B" unit, which will be referred to many times, be understood and that this article include a perspective of the entire system. The "B" unit gives the cost accountant a common denominator with which to work and, even though products and methods of production change, the accountant still is able by means of the "B" unit to make comparisons of plant efficiencies and production costs.

The basic principle of this incentive system may be established as follows:

The method assumes—

1. That all production is the result of human effort.
2. That human physical effort is produced by

motion or position and accompanied by a strain which produces fatigue.

3. That human physical effort can be measured and observed in terms of time elapsed.
4. That the recuperation from fatigue is partially attained through rest, which can be also measured in terms of elapsed time.
5. That all human physical effort is measurable in terms of a common unit, which comprises effort and relaxation in proportions varying with the nature and amount of strain.
6. That as the type of work varies, the proportions of work and rest vary within the unit, but not the unit.

The "B" unit more clearly defined is *the amount of effective effort that a normal man working at a normal speed and under normal conditions will put forth in one minute. Each unit may comprise a small or large per cent of rest, depending upon the production being measured.*

Each operation is measured in terms of so many "B" units which are established either by time studies made with a stop watch, or by being set up synthetically on the basis of previous time studies. In many plants these studies are made with the aid of motion pictures. Standards are set very carefully and once they are set they cannot be changed unless there is some change in the operation. This gives the employees confidence to do their best, with the knowledge that the standard will remain fixed even though they put forth extraordinary effort and double their output, to earn a substantial premium as a reward for doing so. A system properly installed will gain the employees' confidence. Our experience has been that employees will ask for the privilege of working under this plan because of the increased compensation. No attempt will be made here to cover the time study procedure. In general, it must be recognized that the setting of these standards must take into account many factors such as nature of working conditions, nature of strains, nature of task, skill of workers being studied, weights of parts handled, etc.

Employees receive a guaranteed base rate per hour which is the regular hourly scale for a particular class of work. For this base rate an employee is expected to produce 60 "B" units per hour, and for each unit produced in excess of 60

\*Data and illustrations from a study, "A Plant Weldery," submitted to the James F. Lincoln Arc Welding Foundation in its recent \$200,000 Industrial Progress Award Program for reports and advances and improvements made by the applications of arc welding in design, fabrication, construction and maintenance.



the employee receives a premium. An employee may, by putting forth extra effort, increase his earnings from 1 to 40 per cent. He is able to do this by making his efforts more effective, by increasing his skill, and by not taking advantage of the rest periods for which an allowance is made in setting the "B" unit value of each operation. Foremen also receive a bonus based upon the rate of accomplishment in their department. The employee is given a "Process Allowance," which is the time in minutes allowed an operator for enforced idleness beyond his control caused by variations in material worked upon, equipment limitations or unbalanced conditions within a group. The Process Allowance is added to the number of "B" units actually produced to arrive at what is known as the "Pay Index" or the rate of performance which, in turn, is the basis on which the operator's premium is figured, that is, for all "B" units produced above 60 per hour. This index is the measure of each employee's accomplishment.

#### Posting Sheet Shows Time Units

A "Posting Sheet," which is the backbone of a series of detailed reports, is kept in each department. It shows the daily performance of each individual and the premium units earned. The employee can use this information to compute his premium by multiplying his premium units by his base rate and dividing by 60 minutes per hour. This Posting Sheet will be referred to again later in this report. This information is available to the foremen and at a quick glance they can see the accomplishment of any employee for the preceding day. The employee's weekly index is posted to a Kardex personal history file for later use. The plant manager receives a daily chart showing the index (rate of accomplishment) of the plant broken down by departments which can be supplemented by individual indexes. This gives the manager a valuable tool to aid in labor cost control as he has 24 hour information compiled daily and accumulated weekly on the rate of accomplishment of any man or department in the plant. Along with this information the plant management receives a great deal of other information concerning work not done on standards, per cent not on standards, etc.

The Bedaux plan is really an efficiency move from the management viewpoint because this system exposes idleness and non-productive efforts. If the system is installed fairly, both labor and management will benefit. The average net index of the productive employees at the LeTourneau plant prior to installation of the Bedaux system was 31 "B" units per hour, and after one and a half years of using this plan the average net index was 60.4 "B" units per hour. Such an increase in productivity is almost unbelievable. To the net index of 60.4 must be added the process allowance to obtain the pay index or the basis on which the worker's premium is computed. The average premium for each worker runs well in

1. Check in Parts	7.4	
2. Get & Pos. Bot. in Jig	12.7	
3. Unit # of Bot.	5	
4. Pos. Frt. Jig	2.0	
5. Pos. Jig Axles, Axle Clamp Blks. & Bolt Pits.	11.6	
6. Pos. Crossbeam	4.2	
7. Pos. L. Side Sheet Str.	11.3	
8. Unit # of L. Side Sheet	5	
9. Pos. Rt. Side Sheet Str.	11.3	
10. Unit # of Rt. Side Sheet	5	
11. Align & Tack Bot. & Side Sheets	25.5	
12. Align & Tack Crossbeam	5.3	
13. Pos. & Tack Drawbar Beam	2.5	
14. Pos. & Tack Rear Diags. & Crossbraces	6.2	
15. Pos. & Tack Axle Supports to Diags.	6.5	
16. Pos. & Tack Axle Support & Drawbar Caps	8.6	
17. Pos. & Tack Rt. & L. Drawbar Braces	5.1	
18. Align & Tack Axle Blk. to Uprts. & Supports	6.5	
19. Pos. & Tack Rear Crossbeam Tie Straps	2.6	
20. Tack Bolt Pits. to Crossbeam	2.3	
21. Pos. & Tack Rt. & L. Bolt Tie Straps	3.1	
22. Pos. & Tack Cable Spool Base to Crossbeam	1.9	
23. W. Bot. to Rt. & L. Side Sheets (Drag Bead)	16.9	
24. W. Crossbeam to L. Rear Uprt. (Drag Bead - 3 Sides)	4.7	
25. W. L. Crossbeam Tie Strap to Crossbeam & R. Uprt. (Drag Bead)	2.6	
26. W. Crossbeam to Rt. Rear Uprt. (Drag Bead - 3 Sides)	4.3	
27. W. Rt. Crossbeam Tie Strap to Crossbeam & L. Uprt. (Drag Bead)	2.6	
28. W. Four Axle Blks. (Drag Bead)	7.0	
29. W. Drawbar to Bot. (Drag Bead)	1.3	
30. W. Drawbar to Bolt Pit. (Drag Bead)	1.6	
31. W. Rear Diag. to Drawbar (Drag Bead)	2.9	
32. W. Rear Diag. to Crossbeam (Drag Bead)	3.3	
33. W. Rear Hitch Bolt Pits. (Drag Bead)	5.0	
34. W. L. Shv. Hng. to Side Sheet (Drag Bead)	2.1	
35. W. Rt. Shv. Hng. to Side Sheet (Drag Bead)	2.1	
36. Pos. & Clamp Super Str. in Jig	17.8	
37. Tack A-Frame to Side Sheets	2.0	
38. Pos. & Tack Rt. & L. Side Sheet Shv. Hngs. & Align (with Rope)	23.5	
39. T. Spring Pipe to Crossbeam	1.4	
40. Pos. & Tack Rt. Diag. Strut to Eye Pit. & Crossbeam	4.2	
41. Pos. & Tack L. Diag. Strut to Eye Pit. & Crossbeam	7.1	
42. W. Rt. Diag. Strut to Eye Pit. (Drag Bead)	2.6	
43. W. L. Diag. Strut to Eye Pit. (Drag Bead)	2.2	
44. W. L. Diag. Strut to Crossbeam (Drag Bead)	1.6	
45. W. Rt. Diag. Strut to Crossbeam (Drag Bead)	1.8	
46. W. A-Frame to Rt. & L. Side Sheets (Drag Bead)	11.6	
47. Pos. & T. Cable Guide B. R. - Top Rail to A-Frame Side Shv. Hng.	4.7	
48. Pos. & T. Spiral Shv. Support Gasket to Crossbeam	1.5	
49. W. Spring Pipe to Crossbeam (Drag Bead)	3.3	
50. Locksm. Jig: Remove Jig from Body	16.6	
51. Aside Str.	11.3	
52. Paint Unit # on Str.	6	

Date \_\_\_\_\_ SHIPT: DAY \_\_\_\_\_ NITE \_\_\_\_\_ TOTAL TOB. 9  
Foreman's O.K. \_\_\_\_\_ UNIT NO. \_\_\_\_\_  
L. P. SCRAPER BODY IN SINGLE PIECE JIG (SET UP) JOB NO. \_\_\_\_\_  
H 6500

Exhibit 1—This "Check Sheet" shows the "standard" value established for each operation through suitable time studies. The mechanic gets a copy, fills in his clock number and checks off each operation as finished. His daily total then shows if he is producing, according to established speed.

excess of \$4.00 per week, some premiums run as high as \$15.00 per week.

Costs are not generally used to establish selling prices but it is expected that some day they will be so used and the cost department plans to have accurate information available when that time comes. The present system has been developed to where the management has accepted the plan with confidence.

#### Accounting for Labor

In order to accumulate the units of work produced in the factory, it is necessary that there be some means of gathering this information. The form which serves this purpose is known as a "Check Sheet." These sheets are designed to permit the factory worker to record his daily work output with the minimum of clerical work. Wherever possible, a Check Sheet is designed to fit each particular job, and in these cases all that is necessary on the part of the employee is for him to record his clock number and the amount of work done on that structure or part. (See Exhibit 1.)

You will note on Exhibit 1 that each operation is followed by the standard value of that operation. When the worker has finished his day's work and marked off the operations he has completed on his Check Sheet, it is a simple operation to add up the values of his work. By doing this it is possible for the employee to know the amount of work he has done that day and be able to compute his daily bonus. In some phases of

Job No.	Operation Name	Over. No.	Time Card Serial No.	No. Pieces Done	Unit No. Pieces	Total (20-15)
	UNIT NUMBERS					
	UNIT NUMBERS					
	UNIT NUMBERS					
	UNIT NUMBERS					
	UNIT NUMBERS					
Foreman's O.K. _____ Machine No. _____				Total		Day
Clock No _____ Name _____		Date _____		Shift		Nite

production it is practical for two or more employees to work cooperatively and share the "B" units of work.

It is not possible to make Check Sheets like the one exhibited for every part and structure that goes through the shop. This is especially true in the Machine Shop and in the Small Parts Fabrication Department, where there might be several thousand operations. For these departments, a "Standards Checking Ticket" (see Exhibit 2) has been devised to permit the listing and description of all operations done in these departments. The Standards Check Ticket does not have the operation values listed on its face, as does the Check Sheet, but these values are on file in the Department in which the operation is done so that the employee may know at any time just what the standard is for any operation he might be working on.

Check sheets are distributed daily to the various departments of the shop by a member of the Standards Time Study Department known as a checker. Each morning at the same time, sheets upon which the employees have recorded their work are picked up and taken to the Time Study Department. They are examined by the checker to determine if it is necessary to make adjustments on sheets so that the shift coming on will

know where to start marking off their work. For example, there are 40 operations in building a scraper body. When quitting time arrives for the Night Shift it is quite probable that a scraper body will be finished up to operation No. 36. (All operations are numbered for convenience.) The Time Study Checker will pick up the sheets as it is necessary to have it in the office to make the daily calculations. However, in order that the Day Shift will know where to start, the checker marks off another Check Sheet showing the unit and job number of the body in process; and also marks off operations 1 to 35 with a red pencil. This is in contrast to the regular black lead pencil used by the shop workers to record their work. This second sheet is then returned to the proper department in the shop so that the day shift will have the information as to the operation on which it is to begin work. By following this procedure, it is impossible for one shift to take more credit than is due.

After these check sheets have been scrutinized by the Time Study Department they are taken to the Standards Clerical Department, where the units are accumulated for each employee of each department. The units are accumulated daily and on the next day are posted to a form known as a "Posting Sheet" (Exhibit 3). The Posting sheet is then placed on a bulletin board in the department where the employees are working. Thus a worker knows on Tuesday what his premium was for Monday. Most employees can compute their premium units and this information is merely a confirmation of their calculations. However, the Posting Sheet lists all the employees working in a department and creates a spirit of competition, which is another reason for the increased production on the part of employees working under the Bedaux wage incentive plan.

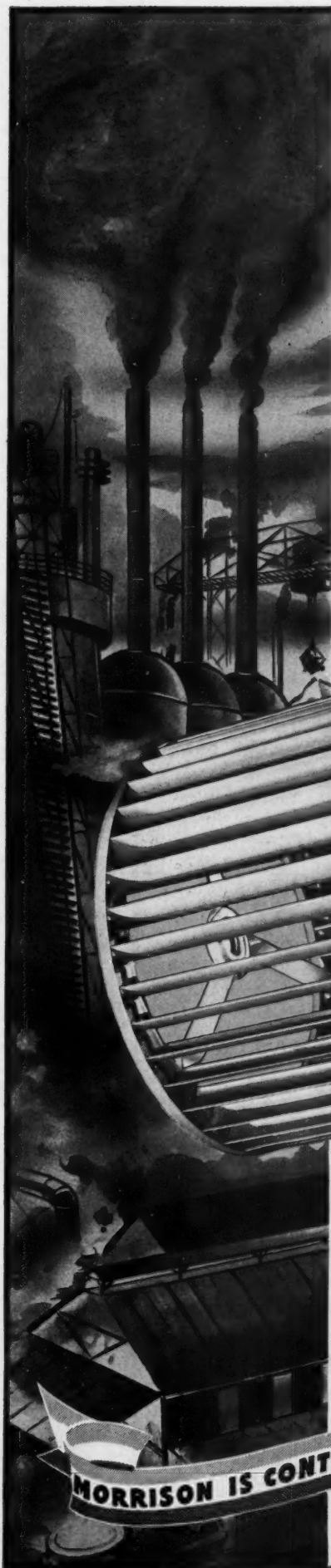
There are two classifications of "B" units; first, the ones produced as the result of an operation directly necessary to the completion of a part, structure, or assembly which are known as pro-

(Continued on page 77)

[illegible]

Exhibit 3— A "Posting Sheet" like this is filled in with all mechanic's names and placed on a bulletin board so that each worker can see day by day how his "B-Units" are accumulating. This is an incentive for better than standard working speed.





★

**MORRISON**  
*Airstream* BLOWER WHEELS

**SAVE *Vital* STEEL**

★

CONSERVATION of steel is important. AIR-  
STREAM Blower Wheels use less steel for  
specified air delivery.

*Save Labor Too!*

Our patented construc-  
tion produced on auto-  
matic equipment saves  
man hours. This saving in  
labor cost is passed on  
to you.



**BUILD YOUR OWN  
BLOWERS!** Consult our  
engineers. They will fur-  
nish you proper scroll  
design to meet your re-  
quirements. Write for complete information or  
request to have engineer call.

★ **MORRISON PRODUCTS, INC.**  
EAST 168TH & WATERLOO ROAD  
CLEVELAND, OHIO

★ ★ ★  
**MORRISON IS CONTRIBUTING TO VICTORY BY CONSERVING STEEL!**

# Overhead-in 1943-Under Ceilings Must Be Corrected Monthly

**By Arthur Roberts**

**R**EGARDLESS of what the New Year brings, one thing is certain—your overhead in 1943 will bear down as heavily, if not heavier, than in 1942 and you must watch it with falcon eye because the accuracy with which you compute the overhead charges on service jobs will have much to do with your ability to come through profitably under price ceilings.

"I figured the right overhead percentage on jobs throughout the year, so why did I come out wrong on profits?" was the perplexed query of an eastern contractor when we handed him the annual profit and loss statement. Such contractors do not realize that the overhead percentage may be right but used in the wrong way, a malpractice dangerous enough in peace time and certain to sabotage profits today when ceilings and other wartime restrictions have slimmed the dollar margin and made it imperative to watch overhead more critically than ever before.

Frequently, we have heard critics venture the

contention that the average warm air heating and sheet metal contractor doesn't know he has an overhead. We find otherwise. He knows he has an overhead, but often he lacks understanding about its make-up, application and movement, which is essential to proper compilation of profitable selling prices. In pre-war times, this fallacy deceived many contractors into using an incorrect overhead figure on estimates. The same practice under our wartime economy is a triple threat to survival. The overhead percentage must not only be right, but it must be used in the right way. From experience analyzing costing problems in this field, we have isolated the "bugs" in the overhead problem and offer this counsel to aid in the profitable pricing of heating and sheet metal jobs under ceilings.

Two requirements must be met to make certain that the right overhead percentage is used in the right way to give the contractor the right perspective on his managerial fitness.

## CUMULATIVE STATEMENT OF OVERHEAD RATIOS

For year ending\_\_\_\_\_

**March overhead percentage**\_\_\_\_\_

[illegible]



- 1—Every item of expense must be included.
- 2—The current year's overhead figure must be used to appraise the profitableness of the current month's business.

#### **Be Sure to Include All Items**

Contractors, in the past, when computing overhead, have been accurate enough in the tabulation of ordinary monthly expenses, such as telephone, rent and light, but they, too often, have omitted internal expenses, such as depreciation, allowance for loss on bad debts and material damage and loss, interest on investment, non-productive labor and their own compensation, because these internal expenses are not represented by actual outlays monthly.

Many contractors do not draw regular salaries, but consider the net profit their compensation and draw against it but make no provision for a definite figure for their personal services to be included in overhead, hence, they chisel themselves when computing the overhead per job. Interest on investment, depreciation, non-productive labor and allowance for bad debts and material loss and damage are too often computed and entered only once yearly by contractors lax in costing.

#### **Monthly Corrected Overhead**

From now on, every contractor should pro-rate such expenses monthly, otherwise, the current figure for overhead will be inaccurate. Incidentally, many business men are including a war reserve in overhead to cover possible losses due to enemy action here and the contingencies of a war economy— $\frac{1}{2}$  of 1 per cent. We haven't the space to debate the war reserve in this field but you might mull over it.

Even where contractors include every item of overhead in their costs, many compute it inaccurately because they use a percentage that is a calendar-year old. They arrive at their 1942 overhead expense percentage by taking 1941 sales and overhead expense; then they use this ratio on all jobs costed in 1942.

For example, if sales in 1941 were \$50,000 and overhead \$12,500, the ratio is 25 per cent overhead-to-sales, so the contractor assumes that if he keeps within this ratio on 1942 jobs, he will come through the year with a satisfactory profit. But overhead, even in normal times, fluctuates, sometimes monthly, upward or downward. Certainly, the ratio was "upped" since 1941, hence, those using a 1941 overhead percentage now, are clipping profits. Contractors using an inaccurate overhead percentage in the March period when prices were frozen, now have a problem on their hands and unless they take effective action at once, they may lose money for the duration.

What to do then, in order to make your overhead keep in line with current outlays on expense? Prepare a "Cumulative Statement of

Overhead Ratios" with a running balance monthly to see if overhead is increasing or decreasing in proportion to business handled. This provides a "moving total" on overhead, month-to-month, going back over 12 months and gives you a figure always up-to-date and good insurance against loss. For example, in October 1942, use the percentage for the period from November 1941 to October 1942, which will give you the most dependable figure with which to cost current sales to determine whether you are going in the red or staying in the black.

#### **How to Use "Moving Total" Overhead**

Each succeeding month, move the figures ahead one month so that only the previous 11 months, plus the current month, are covered in the computation. Without this "moving total," the contractor must depend throughout the entire year on the total for the previous calendar-year. If the current month's overhead percentage, by means of the "moving total," is higher than the overhead percentage for the period prices were frozen, you can't increase it but you can take steps to reduce it the next month to allow for profit. If you wait until the annual or semi-annual profit and loss statement is prepared, as many contractors do, the ratio may get so far out of line that losses may ensue.

#### **You Need Accurate Percentage**

By consistently checking each month against a "moving total," you can determine whether the current year's overhead percentage is more or less than that shown for the period when prices were frozen. Then, when ceilings are finally lifted, the same method will disclose if the current year's overhead percentage is in line with budgeted figures or experience figures covering previous years' operations. If you are getting ceiling prices and your overhead has gotten out of line, then cut overhead or increase volume so that the overhead per sales dollar is decreased in percentage. There are no other ways out for you. Ceiling or no ceiling, the contractor should know where he stands on the current month's overhead. Figuring overhead percentage on a longer basis, as some contractors are doing, leaves too much leeway for loss and misunderstanding in these hectic days.

#### **Be Businesslike — or Fail**

Overhead has been the subject of more discussion in business circles than any other management problem because it has so many angles and operates trickily at times. Watch it closely under ceilings to make sure that you are computing it accurately. Business hazards are greater today than ever before and that means a closer check on all phases of operation and management.

# Association ACTIVITIES

## An Open Letter

To All State and Local Associations in the United States: Gentlemen:

At a recent meeting of the New York State Sheet Metal Roofing & Air Conditioning Contractors' Association, Inc., it was pointed out that our industry is sorely in need of representation nationally in questions of vital importance to our industry, to-wit:

Our lack of representation on the Heating and Plumbing Division of the W.P.B. and our lack of representation and infringement of our constitutional rights in the setup of the Copper Recovery Corp. and the Steel Recovery Corp.

It has been suggested by some of our members that a working nucleus made up of the Secretaries of all the Associations in our industry can accomplish much for our industry nationally in these trying times, and also for the postwar period, just through correspondence for the present time.

While there are many State and Local Associations using their influence to good advantage, the absence of any direct representation of our industry in vital places necessary to the war effort shows the need for us to be heard in a national way. In unity there is strength, and if we are to survive the present emergency and be ready for the postwar period, we must have this national unity and strength.

If your Association believes that there is a vital and urgent need for national unity within our industry and are willing to cooperate, through correspondence, until the opportunity presents itself for a permanent national setup, please write to Clarence J. Meyer, State Secretary, New York State Metal, Roofing & Air Conditioning Contractors' Association, Inc., 569 Genesee St., Buffalo, N. Y.

## New York

The New York State Sheet Metal, Roofing & Air Conditioning Contractors' Association, Inc., has decided to hold the next annual convention at the Palatine Hotel in Newburgh, N. Y., on March 17 and 18, 1943.

The Compensation Group held their annual meeting on November 21, at the Onondaga Hotel, Syracuse. Twenty-one attended, including representatives of Management. Members were enthusiastic over the accomplishment of this first year. A first year's earned premium of just under \$50,000 was shown—to be exact, \$49,776.87. There are 52 members, and now that the group is proving to be a success there should be a rush to join.

Group members received, after paying Management Fee, an initial net discount of 6½ percent, a dividend of 20 percent; making the initial cash saving 23½ percent. Better yet, there is \$7,903 in the "kitty"; that is, this sum out of savings has been allocated to surplus, or stabilizing fund. This makes the total saving to each member 36.99 percent of his premium.

The first six months of the second year ended October 1, 1942. Premiums are greater, losses less. If, during the next six months, a good loss ratio continues, the second year will be even more profitable than the first.

OPM Regulation 251 should be studied very carefully, because we are all licensed now and regimented as contractors to the Government. Meetings should be held in your district to become familiar with these new rules and regulations.

Clarence J. Meyer, State Secretary.

## National

The Board of Directors of the National Warm Air Heating and Air Conditioning Association strongly recommend that all dealers and installers comply strictly with the spirit and letter of Maintenance and Repair Order P-84 issued by the War Production Board.

In view of the critical metal situation, they also recommend that repair parts for furnaces be used as extensively as possible before considering replacement units.

The above resolution was voted at a meeting of the Board of Directors held in Cleveland, Ohio, on December 7, 1942, at the Hotel Cleveland.

## Milwaukee

At the annual meeting of the Milwaukee Sheet Metal Contractors Association, Inc., Milwaukee, held on December 7th, 1942, the following Board of Directors were elected to serve for one year:

Harry Eschenburg	Joseph Geier
Frank Kramer	A. C. Mantel
Walter Marth	R. V. Mundigler
Art Podolske	Louis Stefanik

T. Tonnson

The members of the newly elected Board of Directors held their organization meeting with the following officers being elected:

President—Art Podolske  
Vice President—T. Tonnson  
Secretary—R. V. Mundigler  
Treasurer—Frank Kramer  
Sergeant-at-Arms—Louis Stefanik  
Executive Secretary—Paul L. Biersach

Regular meetings of the association are held the first Monday of each month, Medford Hotel, at 8 o'clock.

Paul L. Biersach, Secretary.

## Detroit

The Detroit Association of Warm Air Heating and Air Conditioning Contractors invites contractors to attend meetings to pick up any valuable crumbs, and offers to discuss any subject at any meeting that a contractor wishes taken up. The Secretary's office is now at 202 Boulevard Building—Phone Madison 0630.

## CONVENTIONS

1943

Mar. 3-5—The Michigan Sheet Metal, Roofing, Heating and Air Conditioning Contractors' Association. Annual. Saginaw. Bancroft Hotel. Elmer Schartow, President, Midland.

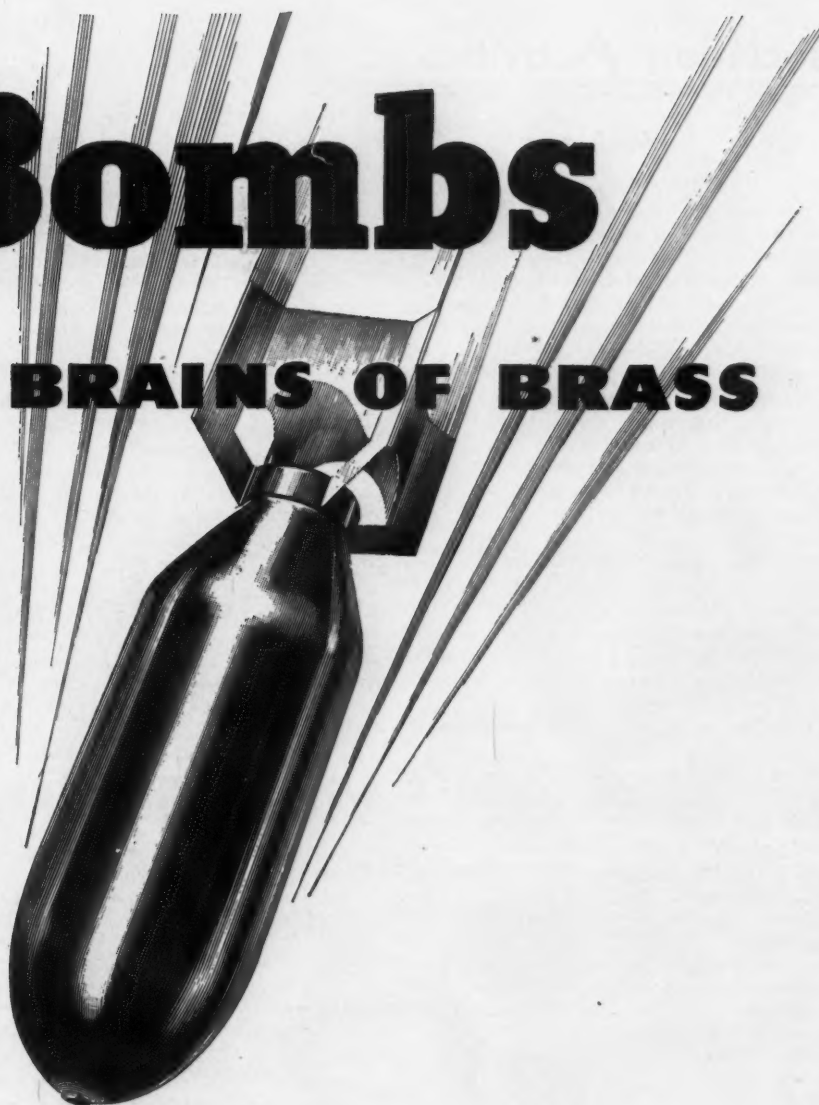
Mar. 17-18—New York State Sheet Metal, Roofing & Air Conditioning Contractors' Association, Inc. Annual. Newburgh, N. Y. Clarence J. Meyer, State Secy., 567 Genesee St., Buffalo.

Apr. 21-22—Sheet Metal Contractors Association of Illinois. Annual. Hotel Jefferson, Peoria. W. W. Johns, Secretary, 212 W. Main St., Urbana.



# Bombs

## HAVE BRAINS OF BRASS



When a high-explosive projectile drops toward the earth or arcs through the sky, it depends on a brain—the fuse—to insure proper detonation on arriving at the enemy objective. As delicately balanced as a fine instrument, standard practice has been to make fuse parts largely of copper alloys. That's because such alloys are corrosion resistant, have adequate strength, and possess the necessary machinability for accurate large scale production of complicated small parts.

There are many different types of fuses for different types of projectiles. Some explode on impact; others, such as in anti-aircraft shells, are "timed" to explode when they reach a pre-calculated distance. A third

type combines both "timing" and impact features. Fuses must have a high safety factor for transportation and handling; they must function with accuracy and certainty, and not deteriorate while awaiting use.

So copper and brass which you formerly used in your trade for so many purposes are doing front line service today in almost incalculable numbers of shells and bombs.

Anaconda mines are producing record tonnages of copper and zinc while our fabricating plants are turning out the sheet, plates, rods and other forms of copper and its alloys that are needed in unprecedented quantities for total victory.



422741B

# Anaconda Copper & Brass

THE AMERICAN BRASS COMPANY, General Offices: Waterbury, Connecticut

Subsidiary of Anaconda Copper Mining Company • In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

# Association Activities . .

## Michigan

Elmer G. Schartow, President of The Michigan Sheet Metal, Roofing, Heating and Air Conditioning Contractors' Association, in an open letter to members and friends of the industry, expresses the sincere hope for a large attendance at the annual convention to be held March 3, 4 and 5 in Saginaw at the Bancroft Hotel.

Mr. Schartow believes that the future belongs to those who prepare for it and that meeting in convention is a great help in this direction. He speaks of the responsibility to the public and the years of training and practice and education required, as well as keeping abreast of new developments and likens the meetings of the association to a sort of postgraduate course.

On Wednesday, March 3rd, there will be a meeting of the Heating Directors and a meeting of Association Directors.

On Thursday, after registration, the convention will listen to an address by Mayor W. L. Bridges.

J. Kessler, OPA Division Director, will address the convention and discuss Price Regulation 251.

Paul Jensen of Dow Chemical Co., Midland, Michigan will demonstrate Saran products and show their application.

Buffet luncheon at 7 p.m., followed by entertainment by the Saginaw association.

On Friday, March 5, there will be a meeting of the Heating Division—E. Simmons, Chairman—at 10 a.m. At the same time, the Sheet Metal and Roofing Division will meet—P. Wierenga, Chairman.

At 11 a.m., the Salesmen's Auxiliary will meet—J. Morrissey, Chairman.

At 2 p. m., James E. Wilson, Regional Priorities Director, will talk.

At 4 p.m., Montague Clark, Dist. Dir. War Man Power Commission will be heard.

At 6:30 p.m.—Banquet and entertainment provided by the Salesmen's Auxiliary.

Registration Fee of \$4 will be charged each person.

Elmer G. Schartow, President, Midland

## Indiana

The Executive Committee of the Sheet Metal and Warm Air Heating Contractors' Association of Indiana, Inc., has been looking forward to holding another one-day session in Indianapolis during the month of February, 1943. Plans had been made to have good speakers in the trade and from Washington to give pep talks during these trying days. We were anxious to get straightened out on matters pertaining to our business.

The executive committee from the Indianapolis District, in furthering their arrangements for the convention, were politely informed that our Government is discouraging the holding of conventions during 1943, due to the rationing of transportation by bus, train or automobile. We want to play the game 100 per cent for Uncle Sam, and due to this fact, we unanimously voted to cancel our hotel accommodations and speakers.

Your executive officers and directors will continue to serve, until their successors have been elected, which we are hoping will be the early part of 1944. This office will continue to keep members posted by bulletins throughout the coming year of changes in the law that will affect our business. Other trade associations are holding together and we must continue to keep our state association active and without the loss of one member.

If your association can be of service, please send in your letters—if we don't know the answer, we will do our best to find out.

Frank G. Sink, President.

## Florida

The Roofing and Sheet Metal Contractors Association of Florida, according to the January 15 copy of "The Florida Roofer," is giving consideration to the open letter from Clarence J. Meyer, State Secretary of the New York State Sheet Metal, Roofing and Air Conditioning Contractors' Association, Inc., and suggestions from other similar organizations will receive consideration, and wherever possible will be given full co-operation. The New York association suggests a working nucleus, made up of the secretaries of all associations in the industry, can accomplish much for the industry nationally in trying times. Particular reference was made to the lack of representation and infringement of our constitutional rights in the setup of the Copper Recovery Corporation and the Steel Recovery Corporation.

One Florida roofing and sheet metal contractor has been forced to sign a contract to sell nine tons of copper at prices which represent a loss of \$1800.

At the Miami convention last year, it was voted to hold the 1943 convention at Lake Wales. Letters have been sent to the officers and other interested members to get an expression as to the advisability of holding a convention this year. Opinions are requested.

Bill Palmer sends the following:

"All business men of Florida from baker to banker—including roofing and sheet metal contractors and thousands of others—are going to have important responsibilities along the post war battle front. We don't want boys that left jobs to fight for the U.S.A. to come back and we have to say, 'Well, boys, no work.' It will be a hard thing to say—so let's all start at once to thinking and helping any movement in our city that gives us business—so we will be able to say to the boys when they get back, 'Sure, come back to work at once.' What boss wouldn't be proud to say that, so let's think about it."

L. A. Burgess, Secretary, 915 No. Dixie Highway,  
West Palm Beach, Fla.

## ASH&VE Installs New Officers

The American Society of Heating and Ventilating Engineers, 51 Madison Ave., New York City, installed newly elected officers at the 49th annual banquet held at the Hotel Gibson, Cincinnati, on January 26. They are:

President—M. F. Blankin, Philadelphia.  
1st Vice President—S. H. Downs, Kalamazoo, Mich.  
2nd Vice President—Prof. C. E. A. Winslow, New Haven, Conn.  
Treasurer—E. K. Campbell, Kansas City, Mo.  
Members of the Council (3-Year Term)—  
John F. Collins, Jr., Pittsburgh.  
Prof. James Holt, Cambridge, Mass.  
E. N. McDonnell, Chicago.  
Lt. Comdr. T. H. Urdahl, Washington, D. C.

The membership elected 5 members of the Committee on Research for three-year terms, as follows:

H. J. Rose, Pittsburgh  
L. P. Saunders, Lockport, N. Y.  
Prof. L. E. Seeley, New Haven, Conn.  
Comdr. A. E. Stacey, Jr., Washington, D. C.  
C. Tasker, Toronto, Ont., Canada

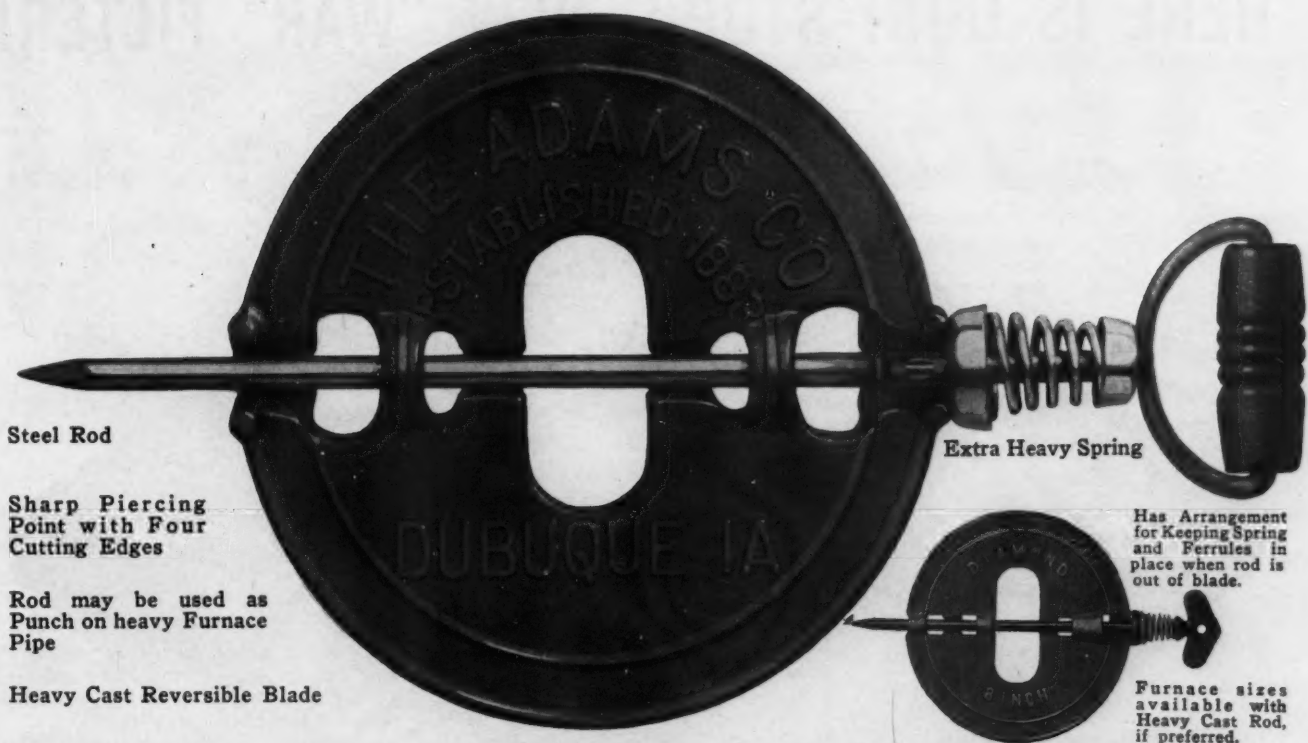
## National Fan Manufacturers

At the twenty-sixth annual meeting of the National Association of Fan Manufacturers held in Buffalo, New York, on January 14, 1943, the following officers were elected for the ensuing year: J. M. Frank, President; J. M. Birkenstock, Vice-President; and L. O. Monroe, Secretary-Treasurer.

## Percy F. Hord

Percy F. Hord, 74, who for many years served as assistant Secretary-Treasurer of The National Wholesale Hardware Association, Philadelphia, passed away January 7 following a heart attack. Funeral services were held from his late residence—407 Woodside Ave., Narberth, Pa., on January 9.





Steel Rod

Sharp Piercing  
Point with Four  
Cutting Edges

Rod may be used as  
Punch on heavy Furnace  
Pipe

Heavy Cast Reversible Blade

Extra Heavy Spring

Has Arrangement  
for Keeping Spring  
and Ferrules in  
place when rod is  
out of blade.

Furnace sizes  
available with  
Heavy Cast Rod,  
if preferred.

## ADAMS DIAMOND SMOKE PIPE DAMPER

Sizes 3 to 18 inches



NO. 1 ADAMS FURNACE  
CHECK DAMPER

End check and collar with full size  
openings, reversible for vertical  
or horizontal smoke pipe. Sizes  
6 to 12 inches



NO. 4 ADAMS FURNACE  
CHECK DAMPER

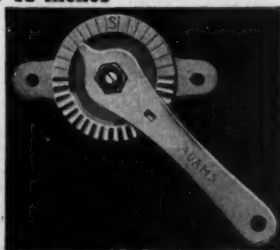
Sizes 6 to 12 inches



NO. 3 ADAMS  
FURNACE  
CHECK  
DAMPER

Reversible for  
vertical or  
horizontal  
smoke pipe.

Sizes 5 to 10  
inches

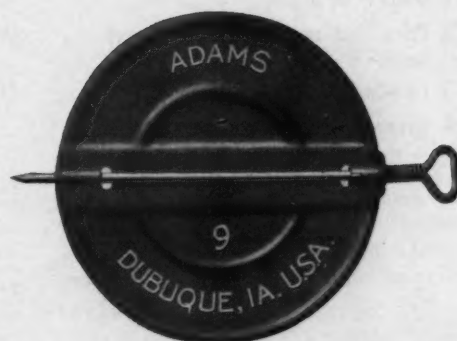


ADAMS DAMPER  
REGULATORS  
2 Sizes — 3 Styles



ADAMS STEEL DAMPER CLIP  
No Rivet

Write for catalog showing these  
and other HEATING SPECIAL-  
TIES we can now furnish on or-  
ders with priority ratings.



ADAMS SHEET METAL DAMPER  
Sizes 6 to 14 inches

1883 SIXTY YEARS OF SERVICE 1943

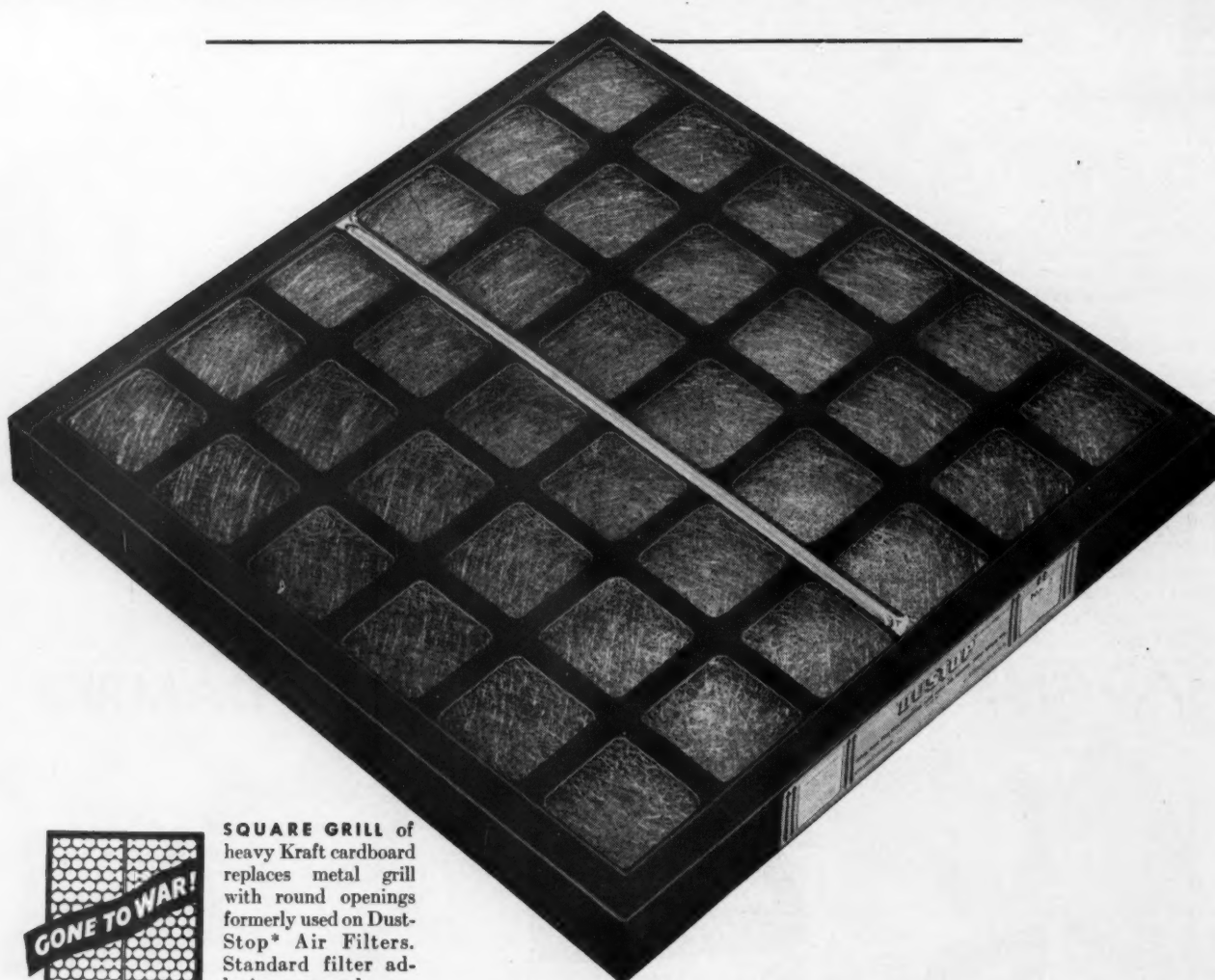
Manufactured by

# THE ADAMS COMPANY

Established 1883

Bridge Street - - Dubuque, Iowa, U. S. A.

# HERE IS DUST-STOP'S NEW "WAR" FILTER!



**SQUARE GRILL** of heavy Kraft cardboard replaces metal grill with round openings formerly used on Dust-Stop\* Air Filters. Standard filter adhesive now used.

- 1 Quickly available
- 2 Price and maintenance economy the same
- 3 Filtering efficiency maintained
- 4 Saves critical metals and materials

**B**OMBER and tank plants, instrument manufacturers, scores of other war industries are using Dust-Stops in such great quantities that more of these filters were sold in 1942 than in any other year.

For dust control in precision manufacture means mechanical ventilation or air conditioning. And the makers of such equipment recognize the importance of Dust-Stops and include them in their systems.

Householders, too, have been using Dust-Stops in greater numbers than formerly. For clean filters help assure

top efficiency from forced warm air furnaces—a big point with fuel rationing.

It was the responsibility of Dust-Stop engineers to meet this increased demand. They met it by designing a filter—the new "war" filter—which saves critical materials and keeps most of the advantages of the former Dust-Stop.

## **Most Advantages of the Leader in the Filter Field Remain Unchanged**

**Performance:** Capacity, 2 CFM per sq. in. of area at 300 FPM. Average resistance, new, in inches of water gauge, .065 for 1-inch, .13 for 2-inch.

**Economy:** Cost only 1c per CFM as original equipment for industrial installations. Less than 1/10 of 1c per CFM to replace.

**Maintenance:** Filter face can be vacuum cleaned or rapped out, this practice can be repeated once or twice, further reducing maintenance costs.

**Easy to Change:** Anyone can replace dirty filters with new Dust-Stops in a jiffy.

**Availability:** Made from all-American materials which are not now listed as critical. Production is being expanded to meet growing requirements.

**What about Fire-safety?** The famous non-inflammable Dust-Stop adhesive is no longer available. As a substitute, standard filter adhesive are now used. The filter media is still made of incombustible glass fibers.

*Owens-Corning Fiberglas Corporation, Toledo, Ohio. In Canada, Fiberglas Canada Ltd., Oshawa, Ontario.*



# FIBERGLAS\* DUSTOP\* AIR FILTERS

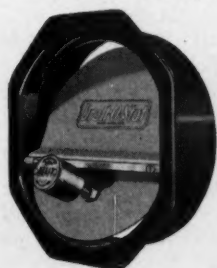
\*T.M. Reg. U.S. Pat. Off.



# New PRODUCTS

## 1—New Draft-O-Stat

The Hotstream Heater Co., Combustion Equipment Division, 8007 Grand Ave., Cleveland, offers the new Model B and Model BM (Motorized)



Model B

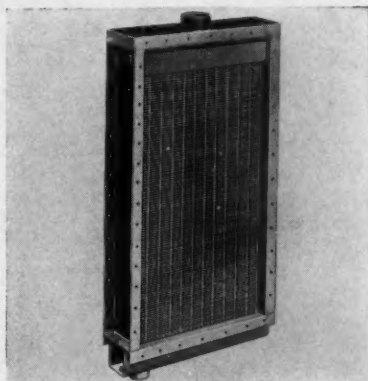
domestic Draft-O-Stat for automatic firing and for manual coal firing.

The Draft-O-Stat is built of welded steel construction—die stamped, is finished in red and black baked enamel, with polished fittings and adjusting mechanism, and is furnished in two sizes for 6 and 7-inch flu pipes and for 8, 9 and 10-inch flues.

## 2—Processing Coils

Modine Manufacturing Co., Racine, Wis., announces a new line of steel heating coils for food dehydration.

Of all-steel construction, the entire coil is dipped in a special lead-alloy bath. Tubes have heavy wall thicknesses to insure maximum resistance to internal steam corrosion. Fins are bonded permanently to tubes with metal, sealing the contact of fin to tube from the corrosive action of air.



Casings are designed for duct installation in end vertical, side vertical or horizontal position. They are constructed of heavy steel channels, Parker-Bonderized and painted.

Modine steel coils are available in three casing widths—24¼, 29 and 37¼ inches; 13 casing lengths ranging from 2 ft. 8½ in. to 10 ft. 8½ inches.

For your convenience a number has been assigned each item. Circle the items in which you are interested on the coupon on page 61 and mail to us.

● Indicates product not listed in 1941 Directroy.

△ Indicates manufacturer not listed in 1941 Directory.

## ● 3—Lincolntrol

The Lincoln Electric Company, 12818 Coit Road, Cleveland, announces the Lincolntrol.

The Lincolntrol—almost as light as a shoe—is strapped onto the welder's foot. As the operator presses down



on the pedal, he moves the pin to operate a current control. As he exerts pressure, he increases the current. Yet, while welding in and around a fuselage, the operator can move around at will.

Especially intended for aircraft welding, the Lincolntrol is applicable for welding of light-gauge sheet.

## 4—Improved A-R-A

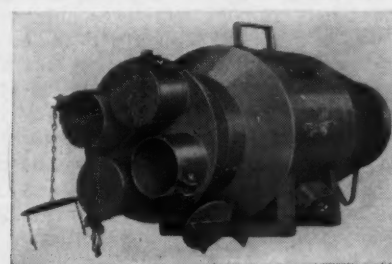
Grant Wilson, Inc., 4101 W. Taylor St., Chicago, offers new improved A-R-A sheets—asbestos protected on both inside and outside surfaces—permanently finished with a new design



in a neutral coloring that will harmonize with any surrounding. A-R-A sheets may be repainted with any oil paint. Their original finish may be wiped off and kept clean. A full carton—220 sq. ft.—weighs about 100 lbs.

## 5—Octopus Jr.

Chelsea Fan & Blower Co., Inc., 1206 Grove St., Irvington, N. J., has developed an exhauster and blower, a small portable unit to eliminate gases, fumes, etc., from closed-in places, such as shipholds, welding rooms, tunnels, vaults and basements.

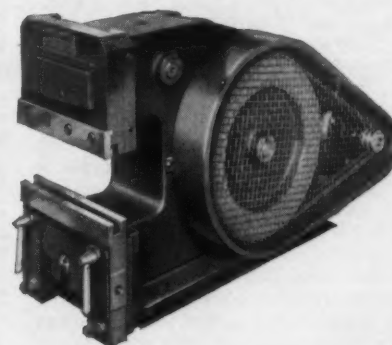


The Octopus, Jr., is powered by a ¾ hp ball-bearing motor, heavy steel wheels, and sucks or blows 2,000 cfm. Weight 70 pounds. Adapters for three 4-inch nozzles or four 3-inch nozzles for flexible hose, with caps to close nozzles not in use. Each 4-inch metal hose of 20-ft. lengths will exhaust 250 cfm, and each 3-inch hose over 200 cfm.

The company offers to ship one on approval to anyone doing war work.

## 6—Press Brake

Whitney Metal Tool Company, 110 Forbes St., Rockford, Illinois, has developed the No. 247 Whitney-Jensen bench-type press brake with a capac-



ity of 14 gauge—72 strokes per minute, stroke adjustment 1 in., length of die bed 18 inches, throat depth 6¼ inches, and equipped with a 1 hp. motor. The ram and die shoe is machined for standard dies.

## New Literature

For your convenience in obtaining copies of new Literature use the coupon on page 61.

### 201—How to Salvage Tools

Eutectic Welding Alloys Company, 40 Worth St., New York City, has prepared for distribution to war plants, an instructive poster on tool salvaging; to keep America's war production tools in operation as long as possible, thereby saving vital material and irreplaceable man hours.

### 202—Motorule

General Electric Company, Schenectady, N. Y., offers a new Motorule for calculating tool power requirements, for determining motor horsepower required for metal-cutting operations—drill, lathe or planer, and miller.

The Motorule supplies metal constants for cast iron, steel and nonferrous metals.

### 203—They Used Their Heads

The Black & Decker Mfg. Co., Towson, Maryland, is distributing a 16-page and cover publication entitled "They Used Their Heads" dealing with the adaptation of portable electric tools to war production emergencies. The material has been gathered by a nation-wide photo-reporting service, and the stories are identified by the report numbers under which the material was received.

### 204—Direct Reading Velocity Meter

Illinois Testing Laboratories, Inc., 420 N. La Salle St., Chicago, is distributing an 8-page folder covering the Alnor Velometer—an instantaneous direct reading air velocity meter. Prices of the Velometer, jets, tools and combinations for residential and commercial heating and air conditioning use and for industrial exhaust systems are included, as well as a schematic diagram showing

some of the many uses of the Alnor Velometer for velocity and pressure measurements of an air duct system.

### 205—How to Fire Bituminous Coal

University of Illinois, Mechanical Engineering Department, Engineering Experiment Station, Urbana, will furnish free charts including essential information on the "nut and slack" method of firing to heating contractors for distribution among his customers.

### 206—Metal Duplicating Without Dies

O'Neil Irwin Manufacturing Company, 300 Eighth Avenue South, Minneapolis, is distributing Catalog No. 43-4—32 pages and cover. This 4th issue has been completely revised and includes several improved Di-Acro units and also an entirely new model (Di-Acro Shear No. 3 of 12 in. in a maximum material thickness of approximately 22-ga. cold rolled, or heavier materials in narrower widths or of greater ductility).

### 207—Metal Grinding, Finishing or Polishing

Minnesota Mining and Manufacturing Company, Department NR1242, Saint Paul, Minnesota, has released a booklet covering their newly developed equipment incorporating the use of surface coated abrasive belts.

The method consists of the use of a backstand idler unit, utilizing a newly perfected segment face contact wheel and surface coated abrasive belts. Present lathe or setup equipment can be used for a complete backstand idler unit acquired for this work.

There are three types of segment face contact wheels that increase the range of work with surface coated abrasive belts by providing a hard, flat surface for driving the belt, but with a soft center so that irregular shaped pieces can be finished.

The segment face wheel using surface coated abrasive belts is also incorporated into a swing grinder for sanding billets, bars and tubes. Pedestal mounted or suspended from overhead rail, it is used for repair grinding, beveling and surface grinding.

## SERIES No. 3

# NIAGARA POWER SQUARING SHEARS

Series No. 3 Niagara Shears operate at 80 strokes per minute. High production squaring and trimming are assured by the instant-acting sleeve clutch, quick, accurate gaging and convenient operation.

They cut sheared edges and narrow strips straight to within a very few thousandths of an inch.

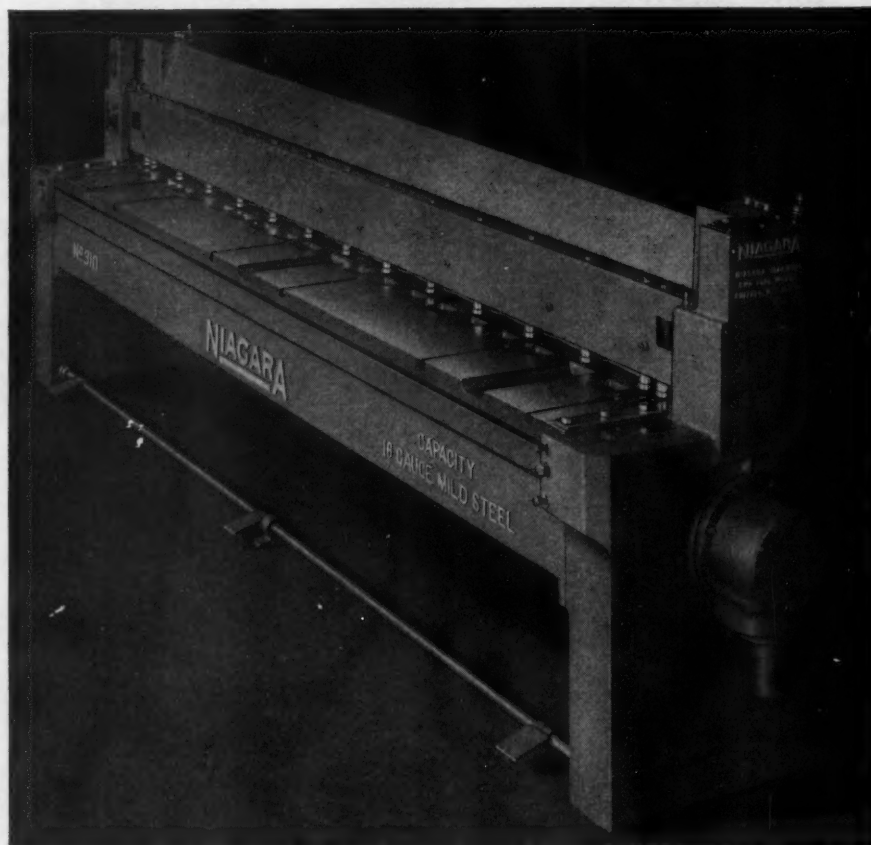
Motor is direct connected and drive is enclosed in oil tight case.

Standard equipment includes ball-bearing, self-measuring parallel back gage, front and side gages, and four edge, solid tool steel knives.

• • •

Niagara Machine & Tool Works  
Buffalo, N. Y.

District Offices: Cleveland, Detroit, New York



Capacities: 14 to 18 Gage. Cutting Lengths: 4 to 12 Feet



## New Literature

For your convenience in obtaining copies of new Literature use the coupon on this page.

### 208—"Quik-Trik" Electrode Holder

Jackson Products, 3261 Wight St., Detroit, Mich., is introducing a new Jackson insulated welding electrode holder with detachable "stinger," made in three models, all insulated. The lock is positive and may be quickly disengaged.

### 209—How to Use Electric Drill

The Black & Decker Mfg. Co., Towson, Maryland, has just published a new handbook—"The Drill Use Book"—designed to show new workers, especially in the war industry plants, the correct methods of using portable electric drills and obtaining greatest efficiency and longest life from these important war production tools.

The booklet covers assembling the drill, the switch control, drill chucks and bits, how to use the drill and several important points on user maintenance and care.

### 210—Draft-O-Stat

The Hotstream Heater Co., 8007 Grand Ave., Cleveland, Ohio, has engineered a new line of Draft-O-Stats, Models B and BM.

The BM motorized Draft-O-Stat can reduce fuel oil consumption as much as 25 per cent by increasing the cut-out period. If conversion from oil to coal is required, no additional wiring or equipment is required since it will operate from the existing oil burner circuit, and will automatically control the coal burning process in response to the action of the room thermostat.

### 211—100 Years of Peace and War

Joseph T. Ryerson & Son, Inc., 16th and Rockwell, Chicago, is celebrating its 100th birthday in wartime and has commemorated the occasion by publishing a brochure entitled "100 Years of Peace and War." The brochure reviews the nation's industrial growth during the past century. Ben Stahl, illustrator for *Saturday Evening Post*, handled the principal drawings which dramatize the events in the history of Ryerson and the nation. The pen and ink sketches were drawn by Joseph Feher.

The story unfolds with reference to the early pioneer Ryerson family that first built and operated iron forges in New Jersey at the time of the Revolutionary War. From there it develops step by step through the growth of the nation's industries—high pointing events which have influenced civilization in relation to steel. The last few pages summarize history-making events by decades, a review of the past century at your finger tips.

#### FOR YOUR CONVENIENCE

American Artisan, 6 N. Michigan Ave.  
Chicago, Ill.

Please ask the manufacturer to send me more information about the equipment mentioned under the following reference numbers in "New Products" and "New Literature."  
(Circle numbers in which you are interested):

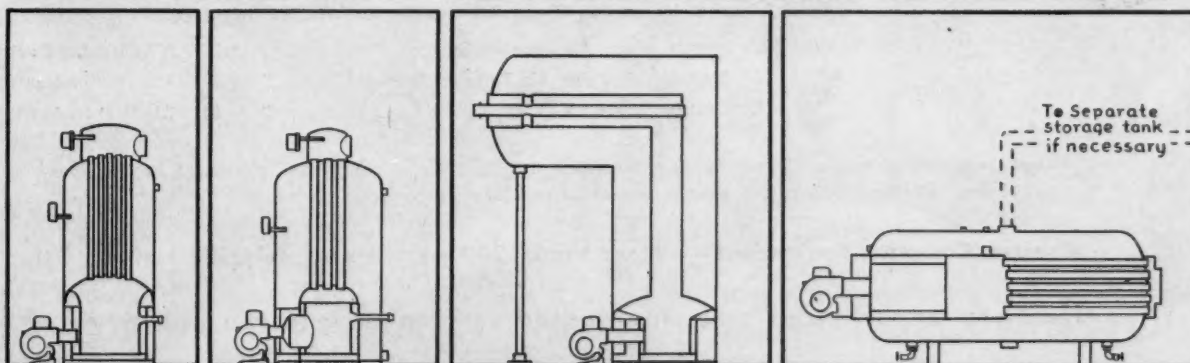
1	2	3	4	5	6
201	202	203	204	205	206
207	208	209	210	211	

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Company .....

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Now built in 4 basic types . . and in sizes ranging up to 540 gal. per hr.

## AQULUX Heavy Duty WATER HEATERS

**N**OW, practically every demand for cheap, abundant hot water for war-industry use can be met with a fully automatic AquLux Water Heater. They are powered with the super-efficient Johnson "Bankheat" pressure-type oil burner which has no equal for economy and enduring serviceability.

In compliance with emergency restrictions, they are not insulated, jacketed nor galvanized . . . but otherwise they are built to Johnson's most rigid pre-war standards of safety, strength and performance.

We suggest that you write for specifications. We will gladly help you with your heating problems . . . even to building "made-to-measure" equipment where necessary.

### S. T. JOHNSON CO.

940 Arlington Ave.  
Oakland, Calif.

401 N. Broad St.  
Philadelphia, Pa.

#### 40 years' experience

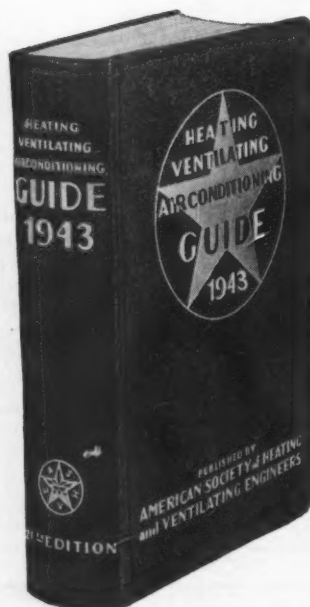
Since the birth of the oil-burner industry, Johnson has pioneered in designing and building fine heating equipment.

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Data essential for men in Heating, Ventilating and Air Conditioning

Engineers, Contractors, Architects—men in government service, industry, research; men in residential, institutional or commercial fields—all will find indispensable data that will save time, promote accuracy and efficiency.



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## With the Manufacturers . . .

### Famous Gives Annual Banquet

The Famous Furnace Company, 6420 Woodland Ave., Cleveland—manufacturers and jobbers of sheet metal, furnaces and roofing supplies—held their annual banquet on December 12, 1942, at the Fenway Hall Hotel in Cleveland.



For the fifth consecutive year, bonuses were distributed by President Hyman Blaushild. Former employees now in the United States armed forces were remembered with a bonus check equivalent to their 1941 bonuses. Mr. Blaushild, in speaking of world conditions expressed the hope that the bonus money would be used by his employees in purchasing defense bonds. The employees presented Mr. Blaushild with a gift in appreciation for his many generosities during the year.

### Scully Changes Name

The name of Scully Steel Products Company, United States Steel Corporation subsidiary, was changed to

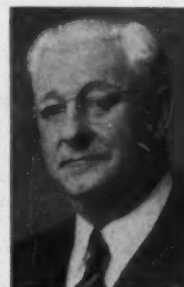
United States Steel Supply Company, effective January 1, 1943. E. E. Aldous, President, announced that the new name will not involve any change in the management or the business in which Scully Steel Products Company has been engaged. The principal reason for the change is to identify the Supply Company more closely with other subsidiaries of United States Steel Corporation.

General headquarters of United States Steel Supply Company are located at Chicago. Warehouses are operated at the following locations: Baltimore, Boston, Chicago, Cleveland, Newark, Pittsburgh, St. Louis and St. Paul. These warehouses under normal conditions are suppliers of a widely diversified line of rolled steel products and related items.

### Rybolt Director of Engineering

The Rybolt Heater Company, Ashland, Ohio, announces the appointment of J. Earle Maynard as Director of Engineering.

For 18 years with American Radiator and Sanitary Corporation as chief heating engineer of the sales engineering department, Mr. Maynard is well known in the warm air heating and ventilating field. Prominent in the activities of the National Warm Air Heating and Ventilating Association, Mr. Maynard for many years has served as Chairman of its Installation Codes Committee. In the Association he has also served as Chairman of its Federal Housing Committee and is a member of the Technical Educational Committee. This Committee launched the Short Term Forced Air Heating Schools at Michigan State University, which conducts an annual streamlined course in heating equipment installation. Mr. Maynard is one of the staff of instructors in this course.



**FOR LOW-COST HEATING, QUICK INSTALLATION  
AND METAL CONSERVATION**

**DIRECTHERM  
UNIT HEATERS  
STOKER-FIRED**

It is a self-contained unit and can be installed or moved in a few hours. No duct work, radiators, or pipes are necessary.

To tend a Directtherm requires a minimum of attention. Once the automatic controls are set, they need not be changed. An unskilled man can take care of it . . . important in these days of labor shortage.

Made in 6 sizes (300,000-1,700,000 BTU).

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Yes, amazing as it may seem, one man and a Lockformer can make more Pittsburgh Locks than 16 men working at 8 brakes. Think of that as you tackle those government jobs.

## SIXTEEN TIMES AS FAST

War work turned out in a hurry. Lockformers make Pittsburgh Locks, Double Seam Locks, Drive Cleats and Right Angle Flanges in a fraction of



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Write or wire for  
catalog.

**The LOCKFORMER Co.**  
4617 ARTHINGTON STREET, CHICAGO, ILLINOIS

## Victory Tax

(Continued from page 26)

credits as indicated above, the employer is permitted by law and may elect to withhold, collect and pay the Victory Tax on the basis of the following table:

For Weekly Payroll Period

If the wages are over	But not over	The amount of tax to be withheld shall be
\$ 12	\$ 16	\$0.10
16	20	.30
20	24	.50
24	28	.70
28	32	.90
32	36	1.10
36	40	1.30
40	50	1.60
50	60	2.10
60	70	2.60
70	80	3.10
80	90	3.60
90	100	4.10
100	110	4.60
110	120	5.10
120	130	5.60
130	140	6.10
140	150	6.60
150	160	7.10
160	170	7.60
170	180	8.10
180	190	8.60
190	200	9.10
200	...	\$9.40 plus 5% of the excess over \$200.

Use of the above table eliminates the necessity of the employer determining deductions and adjustments for individual employees and allows him to withhold amounts based directly upon the employee's gross income.

### The Job Ahead

Appraisal of the job ahead clearly indicates that the employer must:

- (1) Collect the tax every pay day.
- (2) Keep an individual record of the amount collected from every person.
- (3) Transmit quarterly a tax return statement together with the amount of taxes collected.
- (4) Submit an annual statement indicating the total wages or salary paid to each employee.

### Obituaries

Louis Eschenburg of the Eschenburg Sheet Metal Works, 2335B N. 5th St., Milwaukee, and a member of the Wisconsin association, was buried on December 3. Mr. Eschenburg's son, long associated with his father in the business, will continue.

Roland G. Youngren, 32, Youngren's Tin Shop, 806 Iowa Ave., Aurora, Illinois, died on December 27 following a tonsillectomy. Mr. Youngren was active in the Fox Valley Furnace & Sheet Metal Association, and is survived by his wife and son.

Walter A. Sargent, sheet metal contractor of Pekin, Illinois, passed away on December 14.



## Housing In 1942

(Continued from page 17)

owners of these buildings are not inclined to rent directly to war workers, NHA may, if the need is desperate, lease or purchase the buildings outright.

The pressing need, however, at the present time, is not for rooms but for dwelling units for families.

While many places may not be available now, it is expected they may be made available shortly through devices employed to induce people not essential to the war effort to move to other localities where space is not so precious. Among these are pensioners and retired persons now living in critical war areas who may easily move to other and less crowded centers.

Swapping of accommodations by war workers already housed, but remote from their work, with other war workers similarly situated, is being encouraged in congested areas to save both time and transportation. For instance, a worker in an airplane plant on the east side of the city, but who lives on the west side, would be advised to swap homes with another worker employed in a tank plant on the west side but who lives on the east side. In many cases, similar swaps have been made to the satisfaction of workers and employers.

### Labor Expectations

Employment on new construction in 1943 will drop to an average of little more than a million workers, or slightly over half of the average for 1942, Secretary of Labor Perkins has reported.

Employment on privately financed construction is expected to drop to an average monthly level of only 290,000, or approximately 40 per cent of the 1942 average. Labor requirements for publicly financed construction will decline to a monthly average of 750,000, which is only 60 per cent of the labor input on such projects during 1942.

The war construction program reached its peak during August of 1942, when 1,675,000 workers were required for all public construction activity. By June of 1943, only 810,000 construction workers will be employed on publicly financed projects, and a further drop during the last half of 1943 is expected to place employment on these projects at less than 400,000 workers.

Employment on private work declined from 966,000 in January to 452,000 persons in December of 1942. Further decreases are forecast for 1943, and by December, 1943, only 180,000 persons will be working on privately financed construction.

### Buffalo Ass'n Elects Officers

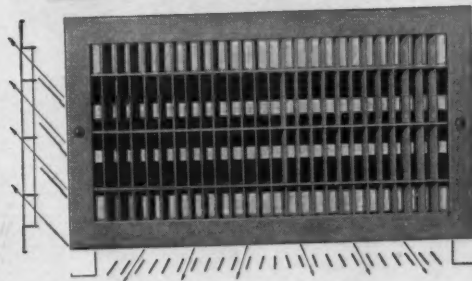
The Buffalo Sheet Metal, Warm Air Heating and Air Conditioning Association has elected the following officers for 1943:

President—Leo J. Olear.  
1st Vice President—John Zwelling.  
2nd Vice President—L. J. Wagner.  
Secretary—Fred J. Frisch.  
Treasurer—Harry Yost.  
Financial Secretary—Julius Zwelling.  
Board of Directors—Bernard Calkins, R. S. Hoesel, John McBride, L. H. Fogg, Alfred Kirschgraber, E. T. McDonald.

The February meeting is to be limited to a "Priority Digest." Meetings are held the first Wednesday of each month at Markeen Hotel, Main at East Utica Streets. The February notice is of the cartoon type, and reminds members to bring along a dealer friend.—Bernard Calkins, 1572 Seneca St., Publicity.

# INDEPENDENT "Fabrikated"

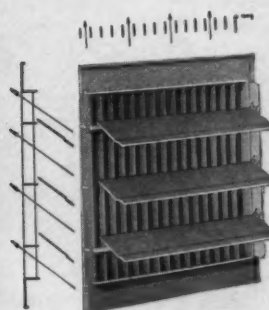
**DIRECTED AIR FLOW  
GRILLES with Deflecting Vanes**



## No. 321A

**Gives Compound Direction  
to Air Flows with Certainty**

Each grille bar can be adjusted individually to direct air flow to the right, left or fanwise as illustrated. Adjustment can be made either before or after installing. Grille bars remain firmly in position without locking, and will not vibrate nor rattle.



REAR VIEW

Horizontal deflecting vanes in back may be individually adjusted to give upward or downward deflection to air flow.

EVERY  
GRILLE BAR IS  
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ADJUSTED



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# CONSERVE TIME AND MATERIALS

## *Fabricate with the arc!*

Eliminate overlapping connecting members . . . join sheet metal directly with the welding arc and save 5% to 20% of materials and fabricating time to aid the war effort. Examples:



**Coal Chutes**, 15' 6" long, 15" diameter, 10-gauge black iron, fabricated with Lincoln Welder and "Fleetweld 7" Electrodes. Straight butt joints conserve metal, provide permanently dust-tight connections. Courtesy Koerbel Bros., Jeannette, Pa.



**Machine Guards**. A profitable line of work when fabricated by Lincoln "Shield-Arc" welding. Butt joints conserve metal. Can be built in 25% less time than old ways. Courtesy Bain Sheet Metal Shop, Tulsa, Okla.



**1308-Page "Bible"**. The New "Procedure Handbook" contains latest information on all phases of arc welding design and practice. 1810 illustrations. A \$5.00 value for only \$1.50 postpaid in U. S.

**THE LINCOLN ELECTRIC COMPANY**  
Cleveland, Ohio

Largest Manufacturers of Arc Welding Equipment in the World

## Kruckman—

### CMP Situation

(Continued from page 23)

vice a Government agency can adequately render. The Smaller War Plants Commission has failed to serve real Smaller Business because neither the people responsible in WPB, nor the smaller business people have understood this fundamental fact.

There has been much talk about creating an independent Office of Civilian Economy. The purpose would be to give the civilian an advocate to champion his interests, to fight for his supplies. At present there is no genuine champion for the civilian among Government War agencies. The very thought of such champion is a contradiction, an anomaly. WPB is purely an agency to produce for War. Army, Navy, and other agencies make war. All the regular old-line agencies have subordinated their peacetime functions to War. The thought has been to create the Civilian Economy unit with James Byrnes at its head. But with the best intention in the world it obviously would not work. As a Government agency it would inevitably drift into helping the War rather than helping the civilian. The civilian must help himself. But do not let that lead you into the mistaken impression that we will not have a Civilian Economy agency. The word here is that will come. The New Deal crowd want it.

### Sheet Metal Should Have a Voice

It appears clear your industries have some adequate representation here. Apparently your business men and your trade association people have thoroughly sold some of your needs to WPB. The curious thing is that your industry apparently does not realize the situation. We get the impression it grouches much about what it does not get. But that is not uncommon. Even those industries which have no particular reason to complain act the same way. Of course, no industry gets all it would get in peacetime. But authoritative sources give the assurance that furnace manufacturers, and those who make heating equipment and supplies and sheet metal supplies need fear no diminution of metal.

The assurance is that you will get as much in the present CMP allocation as you have received the past year, and that you may feel reasonably certain the supply will not fall much, if any, below in the months ahead. Relative abundance in scrap, and the operation of CMP, seems to have made metal more plentiful. Present indications are that you will not get any tin, of course, and it does not seem likely you will get any considerable quantity of hot rolled or cold rolled black sheets or galvanized sheets. There is even some doubt whether or not you can depend upon much tin mill black plate, or any other light gauge short or long terne sheet, even though it is used in barracks and other military work.

The doubt is not due to the lack of metal so much as it is due to the lack of priorities that will permit the scheduling of the sheet to be rolled at the mills. The ratings go to the heavier products, so the mills simply turn out the stuff for which the ratings are presented. Some of your influential and responsible friends in WPB would definitely welcome the production of sheet such as you need. They need it,



too, for many of the projects in which they have direct relationship. They would probably give you active help if you put on the pressure for the sheet you require.

Again, it settles down to the expediting. If you make an intelligent, active, vigorous fight for it, on the ground, you will get approximately what you want. The people who are getting some breaks now are those who insist persistently that they are entitled to something. Those who wait patiently and respectfully back home, going through the motions of appeals to Uncle Sam, get either little or nothing. There is no shenanigan about this. It is simple common sense. There is so much pressure, so much desperate demand, so many visitors and so many appeals, that the most persistent and most intelligent get the breaks. They do not brush off the man who refuses to be brushed off.

#### Our Congressmen Can Help

Bear in mind, too, that WPB, OPA, and the rest of presently have a high respect for Congress. Nelson and others may write chiding letters to Congress but you should be able to discern they all jump to anticipate what Congress might make a fuss about. If you have friends in Congress, and you can induce them to take a friendly interest in your needs, and to let WPB know of their friendly and positive interest, you will get somewhere.

The revised version of P-84 is still held back. Your friends in WPB find it really difficult to obtain sufficient reliable factual data about the need for repairs and replacements. They have been unable to get information that will enable them to determine

how long repairs and replacements will last. The criticism is that they are given selling talks instead of facts. They have found in the past that when they take the most reliable figures and cut them in half they are still far too liberal for the purposes in mind. It surprised me to learn that they found few manufacturers and servicers have accurate and specific data about repairs and replacements. Most of the estimates were pure guesswork, and the "guestimates" ranged usually from 5% to 10% of their average production. Another difficulty stems from the fact that the business is spread widely and is represented by innumerable small quantities. If you feel inclined to quarrel with this viewpoint, please bear in mind I am giving you the honest thought of sincere officials.

#### Who Can Buy Steel Furnaces

There have been many questions about the apparent inconsistency between Order L-22-a, and Application Form PD-704. The Order restricts delivery of steel furnaces exclusively to Army, Navy, Maritime Commission and Defense Plant Corporations. Application Form PD-704 which must be used to obtain the furnaces lists other agencies which may use the form to procure equipment. People in your industry apparently are confused because the war housing agencies are listed on the application form. The answer is simple. The Order is controlling. It is the precise directive in regard to those to whom you may supply steel furnaces. The application form PD-704 is simply the paper used to apply for furnaces or for a number of other types of equipment. The other agencies are listed



Countless skilled sheet-metal workers have learned their trade on PEXTO Machines and Tools, and carried on through their productive years with the same line of products. This has been going on since 1785 when PEXTO produced some of the first equipment used by the Industry.

## LIFE-LONG STANDBYS of SHEET-METAL WORKERS



SQUARING SHEARS

THE PECK, STOW & WILCOX COMPANY

SOUTHINGTON, CONNECTICUT, U. S. A.

# IT'S ALWAYS DARKEST JUST BEFORE DAWN



No one realizes better than we the difficulties of doing business with which the heating contractors are faced in these trying times. But remember that it's always darkest just before dawn.

**VICTORY** *will be ours!* We hope in the not too distant future. And with it will come the release of a flood of business to reward those who have struggled to carry on. In the meantime we will do all within our power to serve the trade to the fullest extent that war demands and Government regulations permit. Your orders will be appreciated as always.



**HART & COOLEY MANUFACTURING CO.**

*World's Largest Manufacturers of  
Registers, Grilles, Furnace Accessories*  
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on the Application Form because the other agencies are eligible to purchase other equipment. They are not eligible for furnaces.

## Industry Member on WPB

Plumbing and Heating Division of WPB strives to give the industry efficient service. It has worked closely with the Industry Advisory Committees. To speed its work further it has lately invited industry experts and specialists to volunteer for full time service. The first invitation went to the furnace industry, when L. R. Taylor, Vice-President, International Heater Company, Utica, N. Y., is doing full-time duty here in Washington as consultant. After him came Mat Hunter, of the National Radiator Company, as consultant on boilers. David Gulick, of Eljer, will be here shortly to act as consultant for plumbing.

## Zideck—Plane

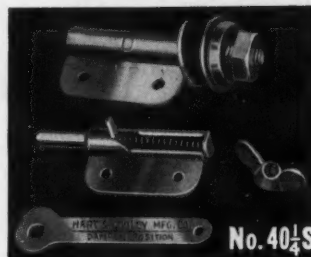
### Part Construction

(Continued from page 45)

the Exhaust Collector, and the Cowling connecting to the Fore Section of the Plane. The Engine Cooling System is concealed under the engine mounting. (This was described in the December issue of the ARTISAN.)

By studying the foregoing text with the aid of the drawings accompanying it, we see that the visible bulk of the plane is largely sheet metal, and that, dissecting it into its components of ribs, beams, angles, channels and panels; its construc-

## H&C DAMPER REGULATOR SETS



No. 40 1/4 S

**ECONOMY TYPE.** Three ways to install: 1. With lock nut but without handle (for tamper-proof setting). 2. With handle and lock nut. 3. With handle and wing nut. Nut prevents damper vibration. Handle always indicates position of damper (Patent 2,146,142). Furnished with handy snap end bearing. Complete set in carton. Made only with 1/4" bearings.

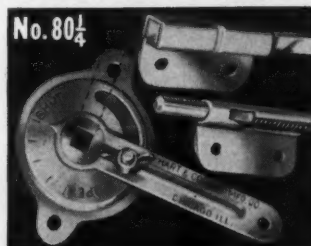
LIST PRICE.....No. 40 1/4 S.....\$0.30



No. 50 1/4

**BRACKET TYPE.** Nut holds damper securely, preventing vibration. Handle which indicates position of damper, may be left in place permanently or removed after adjustment (to prevent tampering). Snap End Bearing on 1/4" size, Solid Bearing on 3/8" size. Each set individually packaged.

LIST PRICES.....No. 50 1/4.....\$0.40  
No. 50 3/8.....\$0.60



No. 80 1/4

**DISK TYPE.** Like all H&C sets, this set is equally adaptable to splitter or regular dampers. Snap End Bearing on 1/4" size, Solid Bearing on 3/8" size. All parts are rust proofed. Complete set in carton.

LIST PRICES.....No. 80 1/4.....\$0.40  
No. 80 3/8.....\$0.60

See your jobber or write for literature and sample.

**HART & COOLEY MANUFACTURING CO.**  
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tion is a simple matter of parts-layout, of accurate placement of provisions, of precise formations and riveting, which leaves the metal exposed to the air current smooth and without bulges. When this is done, the terrifying aspect of aircraft construction—that part of it that relates to sheet metal—quickly disappears.

### Maximum Price Regulation 251

(Continued from page 21)

**RECORDS**—Complete—must be kept as long as Emergency Price Control Act remains in effect. Must be available to OPA for inspection at any reasonable time. Also, must keep such other records and make such other reports as OPA may from time to time require.

**LICENSE**—Any person making a sale hereunder is automatically licensed, which will remain in effect as long as the Emergency Price Control Act remains in effect unless said license is revoked. All persons hereby licensed may be required to register with OPA.

**ENFORCEMENT**—Violators are subject to criminal penalties, civil enforcement proceedings, license suspension proceedings and suits for treble damages from injured parties.

**EVASION**—Any change from your previous practices for the purpose of escaping the above requirements is an evasion and is expressly prohibited.

**INTERPRETATION**—This interpretation is made from the Regulation itself without the benefit of any interpretative information from the OPA. There is undoubtedly room for some difference of opinion and there may be widely variant interpretations eventually emanating from Washington. It, however, is substantially correct.

## RANDALL BEARINGS for the industrial theater of war



### FLANGE OR SIDE MOUNT PILLOW BLOCK

Tough . . . built to take punishment . . . to give "Ranger" performance. In active service everywhere.

The arsenal of democracy achieved a miracle of production in '42. Even greater is the industrial objective set for '43. Don't let faulty bearings affect your equipment in the field. Smooth out your problems by adapting Randall *self-aligning and self-lubricating* Pillow Blocks to your needs. They are easy, quick to install, smooth, quiet and dependable in operation, and an extraordinary economy. Write today for catalog of styles and sizes and complete information.

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609 W. Lake St.

Chicago, Illinois

**"THIS Sweater Girl..."**

**NEEDS A FIELD DRAFT CONTROL**



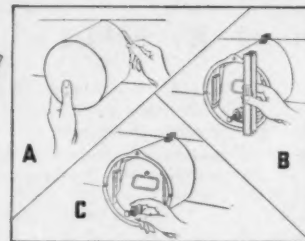
Heaping on extra sweaters is ONE answer to fuel rationing. A better answer, for YOUR heating clients, is a Field Control, capable of s-t-r-e-t-c-h-i-n-g fuel 5% to 25% further. Severe fuel rationing has put SALES

MAGIC into these simple words, "A Field Control keeps you WARMER on LESS fuel!" And because EVERYONE is responsible for keeping warm and well on less fuel, every home, office, store and factory is a prospect. There's real profit in each easy sale, installation usually taking less than 30 minutes for a domestic unit.

### INSTALLATION'S SIMPLE AS **ABC**

**A** Hold collar snugly against stove pipe in correct position and mark outline on pipe. Snip hole in pipe  $\frac{1}{2}$ " smaller than mark; snip slits  $\frac{1}{2}$ " deep around hole.

**B** Strap collar to pipe; bend  $\frac{1}{2}$ " slits into collar. Fasten control into collar and true control up and down and sideways by checking with carpenter's spirit level for accuracy.

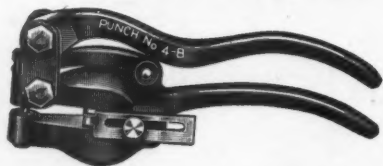


**C** Factory balanced, control requires only a simple hand adjustment for the particular installation. Set for minimum draft consistent with combustion and heat demands as required.

**FIELD CONTROL DIVISION**  
**MENDOTA, ILLINOIS**



A REAL *Time Saver*



## The No. 4B PUNCH by *Whitney*

This punch is accepted by leading contractors and dealers as a real time-saver in the shop and on the job. Men who use it every day know it can't be beat for clean, fast punching. Has a capacity of 1/4" through 16 ga., weight 3 pounds, 8 1/2" in length, depth of throat, 2". Complete tool includes three punches and three dies of specified sizes with die adjusting key.



## Perforated METALS

H. & K. ENLISTS

... all its facilities and a wealth of experience in the perforating of metals and other sheet materials to further the essentials of war. Round hole perforations are available in a wide range from as small as .020" dia. to 7" dia.—slot and oblong holes are made as narrow as .008" and as wide as required. Write us for any information needed.

ANY METAL—ANY PERFORATION



5649 Fillmore St., Chicago, Ill.

New York Office, 114 Liberty St.

## KEEP 'EM FIRING

with *Gar Wood*

- ★ Self-Contained Forced Warm Air Automatic Oil-Fired Heating Units, (from 50,000 to 500,000 B.T.U./Hr.)
- ★ Industrial Space Heaters up to 500,000 B.T.U./Hr.
- ★ Boiler-Burner Units up to 25 HP.

Some Distributors and Dealers are receiving Government business for Heating Equipment. If you are one of those who are called upon to submit estimates, heating plans and surveys, we suggest you enlist our cooperation and our engineering service.

Write today for "ENGINEERING STANDARDS"—this valuable 72-page book on Engineering, Installation and Operation of Heating Systems, sent free on request to Sheet Metal Contractors and Dealers, Engineers and Architects. This offer made for a limited time only. Address reply to Dept. 14

HEATING DIVISION  
**GAR WOOD INDUSTRIES, INC., DETROIT**  
*Protect Freedom—Buy War Bonds*



For  
Victory

Buy

UNITED STATES

WAR SAVINGS BONDS

and

STAMPS



## On Our Industry's Front

(Continued from page 19)

was formalized in Ration Order No. 9 and became effective December 18, 1942. Under its provisions, the retail sale of both new coal-fired heating stoves and new oil-fired heating stoves, except to the Army, Navy, Marine Corps, and Maritime Commission, will be restricted to those consumers who have been granted a certificate of purchase by their local War Price and Rationing Boards. This Ration Order, which is effective throughout the area in which fuel oil is now rationed, applies only to new heating units and does not affect the sale of cooking appliances.

The primary objective of the program is to facilitate the purchase of coal-fired heating stoves by consumers who are now using oil-burning heaters. Provision is also made, however, for persons who need a stove to heat new essential living or working space as well as for those persons whose present coal-burning equipment is damaged or worn out beyond repair. A statement that the equipment is damaged or worn out beyond repair, bearing both the owner's signature and that of a dealer or heating contractor, must be presented to the Board in order for a person to be eligible for the purchase of a replacement unit.

Another group of persons who will be encouraged to purchase these coal-burning stoves will be individuals who are eligible under the Fuel Oil Rationing Regulations for an auxiliary oil ration of 350 gallons or more and who wish to use coal-burning equipment instead of oil.

Sales of new oil-burning stoves are strictly limited. They will be permitted only where the local boards may issue certificates for their purchase. A person who is replacing oil-burning equipment will qualify only if his old equipment is beyond repair and he cannot use coal as a fuel because there is no one in the household who is physically able to operate coal-burning equipment, or the space to be heated is a house trailer, or there is no coal or coal-burning equipment available, or there is no flue, chimney, or other provision for venting.

A purchase certificate issued by the local board for any kind of a rationed stove is surrendered to the dealer at, or before, the time the stove is delivered or installed.

Dealers, wholesalers, and manufacturers in the fuel oil rationed area may buy stoves or space heaters from dealers, wholesalers, or manufacturers anywhere in the United States without the surrendering of certificates.

All dealers, wholesalers, and manufacturers are required to maintain for two years complete records of all new oil or new coal-burning heating stoves in their inventory on the effective date of the order. They must also maintain complete information on the date of delivery of new coal or new oil-fired heating stoves received by them after this date, including the name and address of the person or firm from whom this equipment was received and the number of units of each type received. A similar record of each sale to consumers is required. Purchase certificates are to be maintained in the files of the dealers for a two-year period.

# CHENEY

## Protected METAL

**A** PROTECTED STEEL SHEET. Special slate-pitch' coating makes it moisture-proof, weather-proof and will resist heat up to 230° F. Will not crack or peel. Meets government specifications.

CHENEY "Protected" METAL is tough. It can be sheared, bent in hand brake, Pittsburgh locked, malleated, riveted and worked with regular shop tools.

Forms easily into warm air heating or ventilating ducts, flashings, valleys, metal roofs, downspouts. Adaptable to all general sheet metal work.

Available for immediate shipment.  
Plain sheets 36" x 96", 26 to 18 gauge.

Conductor Pipe, round, square and corrugated.

Elbows. Gutter.

Corrugated Roofing and Siding.

2-V and 3-V Crimp Roofing.

Weatherboard (clapboard siding).

Cheney Flashing. Cheney Reglet.

We can furnish material for maintenance and repair. Consult your nearest distributor and ask about the new low priority requirements. Send for samples and full information.

### SOLD BY THE FOLLOWING EXCLUSIVE DISTRIBUTORS ONLY:

BALTIMORE: Lyon, Conklin & Co., Inc.

BOSTON: Herrick Company

BUFFALO: The J. M. & L. A. Osborn Co.

CHICAGO: Central Steel & Wire Co.

CINCINNATI:

The J. M. & L. A. Osborn Company

Central Steel & Wire Company

CLEVELAND: The J. M. & L. A. Osborn Co.

DAYTON, O.: Central Steel & Wire Co.

DETROIT: The J. M. & L. A. Osborn Co.

MEMPHIS, TENN.: Pidgeon-Thomas Iron Works

NEW YORK: Bayonne Steel Co., Inc., L.I. City

PHILADELPHIA: W. F. Potts, Son & Co., Inc.

PITTSBURGH: Follansbee Steel Corp.

ROCHESTER: Follansbee Steel Corp.

ST. LOUIS: Hammond Sheet Metal Co.

WASHINGTON, D. C.: Lyon, Conklin & Co., Inc.

\*DISTRIBUTORS:—Some desirable territory still available. Write today.

**CHENEY METAL PRODUCTS CO.**  
TRENTON, NEW JERSEY

# OVER 14,000 VITROLINER CHIMNEYS

were SUCCESSFULLY installed in Defense Houses throughout America—all in record time—now giving highly satisfactory service.

Write to the pioneers of porcelain enameled chimneys.



CONDENSATION  
ENGINEERING  
CORPORATION

2515 ARCHER AVENUE • CHICAGO ILL. • PHONE CALUMET 4362

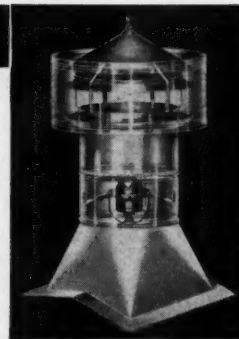
## E-Z-ON damper regulators Save Labor-Time in DEFENSE HOUSING

With E-Z-ONS, you cut Damper installing time in HALF, reduce use of CRITICAL MATERIALS, make better, smoother-operating, rattle-free installations—even with unskilled workers. The new "Snap-Tite" Retractable Tail Piece avoids any need for bending the damper or springing the pipe. Just insert the head piece through one hole, and the Snap-Tite tail piece snaps through the opposite hole automatically . . . Another time-saving feature now so important on Wartime Heating Work.

Your Jobber stocks E-Z-ONS. Try them, and you'll use them from now on.

M. A. GERETT CORPORATION  
2947 NORTH 30th STREET  
MILWAUKEE, WISCONSIN

## BURT VENTILATORS



### For Wartime Construction

For that factory, warehouse or public building devoted to Victory production, you will find a Burt ventilator that exactly meets the specification. Burt makes a type and size for every application, of advanced design, high efficiency, and priced to give "More Air Per Dollar." Put your problem up to Burt Engineers. They are glad to advise with you, without obligating you in the least.

THE BURT MFG. CO.

ROOF VENTILATORS • OIL FILTERS  
EXHAUST HEADS

301 Main St., Akron, Ohio

SEND  
FOR CATALOGS

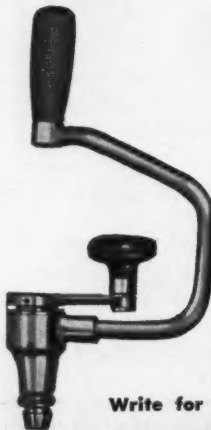
Burt Engineers  
are glad to  
help on plans

## WHITNEY-JENSEN PRODUCTS 30 YEARS EXPERIENCE



### AIRCRAFT RIVET SQUEEZERS

Standard, Alligator, Crab, Snake Head, and Pelican types for speedy, accurate, uniform setting of aluminum rivets up to 5/32" size. Pelican type (shown) in 6 sizes from 1 3/4" to 6" throat-depth, other types in a total of 25 different sizes. REDI-SET model has interchangeable and adjustable dies for several styles of rivets.



### BLIND RIVET PULLER

For setting various kinds of stem or mandrel-type blind rivets. Chuck pulls directly on center with full bearing around head of rivet. Handle can be removed if necessary for work in close quarters, also crank can be replaced by handwheel. Ball bearing construction and other features insure durability. For brazier or flush rivets in 1/8", 5/32", and 3/16" sizes.

Write for Whitney-JENSEN Aircraft Tools Catalog.

WHITNEY METAL TOOL COMPANY

91 FORBES ST. • ROCKFORD, ILL.



## New Warehouse Sheet Price List

(Continued from page 25)

25—	Under 100 lbs.....	+\$1.00
	1-9 bundles .....	Base
	10-49 bundles .....	— .25
	50-99 bundles .....	— .50
	100 bundles-39,999 lbs.....	— .75
27—	Under 150 lbs.....	+\$1.00
	150-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .15
	3,500-39,999 lbs. ....	— .25
35—	Under 400 lbs.....	+\$ .50
	400-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .10
	3,500-9,999 lbs. ....	— .15
	10,000-39,999 lbs. ....	— .25
38—	Under 500 lbs.....	+\$ .50
	500-1,499 lbs. ....	Base
	1,500-3,499 lbs. ....	— .10
	3,500-9,999 lbs. ....	— .15
	10,000-39,999 lbs. ....	— .20
40—	Under 300 lbs.....	+\$ .50
	300-1,999 lbs. ....	Base
	2,000-4,999 lbs. ....	— .20
	5,000-9,999 lbs. ....	— .40
	10,000-39,999 lbs. ....	— .60
41—	Under 25 bundles.....	Base
	25 bundles-39,999 lbs.....	— \$ .25

### Special Extras

(c) The foregoing prices are base prices and quantity extras to which may be added all other extras permitted under Revised Price Schedule No. 49, provided also that where the sellers named in §1306.160 Appendix B of Revised Price Schedule No. 49 published prices which reflected in the base price an extra for size, grade or section (such as the difference in base prices between standard cold rolled sheets and deep drawing cold rolled sheets), such difference in base prices shall be considered an extra which may be added by sellers under the provisions of §1306.159 Appendix A (a) (2) of Revised Price Schedule No. 49.

(d) The prices and extras set forth above shall be used as a basis for the computation of "Lowest Combination" Prices (as defined in §1306.157 (k)).

(e) No seller shall use the foregoing prices or extras if the use thereof would result in a sale at a price higher than such seller's published price as of April 16, 1941.

(f) In all respects other than those specifically set forth in this Appendix E the provisions of Revised Price Schedule No. 49 shall apply.

§1306.158a. *Effective dates of amendments.* . . .

(j) Amendment No. 10 (§§1306.160 Appendix B (d) and 1306.163 Appendix E) shall become effective January 11, 1943.

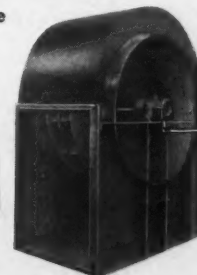
"We Do a Nice  
Volume Now—Thanks  
to CLARAGE  
EQUIPMENT"



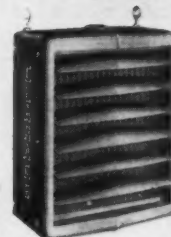
War plants, army barracks and other vital war-time buildings need heating and ventilating, or exhaust and blow pipe installations. This high priority business can be your salvation. Specify Clarage Fans, Blowers, Unit Heaters! Nationally known and Nationally accepted, these highest quality air-handling products help you land the desirable jobs. Write today for descriptive literature.



EXHAUST FANS



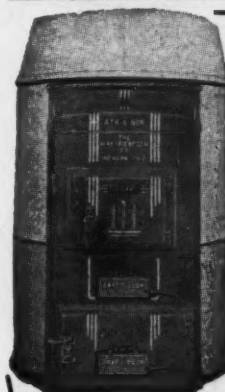
VENTILATING FANS



UNIT HEATERS

COMPLETE  
AIR CONDITIONING  
• COOLING  
• VENTILATION  
• FACTORY HEATING  
• MECHANICAL DRAFT  
• FANS and BLOWERS  
for  
INDUSTRIAL NEEDS

Clarage Fan Company Kalamazoo, Mich.  
APPLICATION ENGINEERING OFFICES IN ALL PRINCIPAL CITIES



**ATH-A-NOR**  
•  
*The Aggressive  
Dealers Choice*  
**ALWAYS**

Yes, Ath-A-Nor Furnaces have been the choice of aggressive dealers for over 50 years, and will continue to be, after the duration when business returns to "as usual."

For the duration when furnaces MUST be replaced, use an Ath-A-Nor. You can be certain that it is the utmost in quality, economy and efficiency . . . will perform perfectly and assure you of a satisfied customer . . . and remember, collect all scrap metal and see that it reaches our government as speedily as possible.

MANUFACTURERS OF QUALITY HEATING EQUIPMENT FOR OVER 50 YEARS

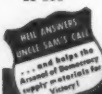
**MAY-FIEBEGER COMPANY**  
NEWARK OHIO

# HEIL IS THE NAME TO REMEMBER

for oil burners . . . oil-designed  
furnaces and boilers that assure you of:

- ✓ Satisfied, loyal customers
- ✓ Minimum service trouble
- ✓ Efficient, economical operation
- ✓ Design features that sell
- ✓ Profitable manufacturer-dealer relations

H-1A



## THE HEIL CO.

GENERAL OFFICES: MILWAUKEE, WISCONSIN

*For Victory*  
*Buy*  
**UNITED STATES WAR**  
**SAVINGS BONDS**  
*and*  
**STAMPS**

## Bremil PORTABLE SHEARS



Your work will proceed faster and neater when you use Bremil Portable Shears on the job or in the shop. Write today for literature showing complete line.

ALL-ALLOY No. 2 cuts up to 1/4" steel plate.

ALL-ALLOY No. 1 cuts up to No. 11 gauge strip or sheet.

Special blades may be obtained for shearing stainless steel.

**BREMIL MFG. CO., ERIE, PA.**

## HIGH EFFICIENCY...

LOW POWER COSTS



LARGE, STREAMLINED INLET MEANS MINIMUM  
LOSSES DUE TO ENTRANCE FRICTION OR EDDIES

WITH THIS

**Sturtevant**  
**MILL EXHAUSTER**

B. F. STURTEVANT COMPANY  
Hyde Park, Boston, Mass.  
Branches in Principal Cities

"Designed and Built by the Pioneer"

## Furnace In-the-Chimney

(Continued from page 31)

assumed that CO<sub>2</sub> content, depending upon condition of coal bed and owner method of firing, will be comparable to that of ordinary coal burning equipment.

To prevent leakage of air to flue gases, good fitting joints between vitreous enameled flue sections must be provided. That this was not the case was emphasized in a few jobs where there existed a considerable drop in CO<sub>2</sub> percentage between the top of the flue and that in the combustion chamber.

By sealing leaks, CO<sub>2</sub> in flue gas at top of the chimney was increased to in excess of 14 per cent. Room temperatures were raised from 60°-65° to 75°-88° in these houses in severe weather.

### Furnace Meets Emergency Needs

The features attracting the WPB, FHA and FPMA are: Small space occupied by the unit and obvious saving in critical materials. Shipping weight with crate is 410 pounds; 220 pounds of iron and steel, of which 60 pounds is light-weight steel.

While this furnace-in-a-chimney had its inception as a "war baby," its efficiency and other virtues do not necessarily confine its use to the period of the emergency.

To conserve the use of steel during the emergency, the combustion chamber is rather small, requiring frequent fuel recharging. However, modifications in process are making for considerable increase in combustion chamber without materially increasing the weight of critical material. The system, as designed, permits its operation or easy conversion with, or to, any type of fuel—solid, liquid or gas.

The heating system or any part, including flues, grates, fire-bed interliner, etc., may be repaired or replaced without disturbing the masonry chimney.

With the lifting of the ban on critical material, the system permits any size combustion chamber and likewise a material increase in B.T.U. delivery.

The combustion chamber is so designed as to be full-floating. In other words, not rigidly attached or a part of the masonry chimney. For which reason, any settling of the chimney would not cause any strain on the fire brick combustion chamber.

With metal becoming more plentiful, for the masonry chimney there could be substituted a double metal heat exchanger consisting of an inner and an outer metal wall.

During the emergency, the chimney heater does save critical material—it will heat the house—it is low in cost—it is a decided improvement over free standing circulating heaters which roast the room in which they stand and never heat the partitioned off bedrooms.



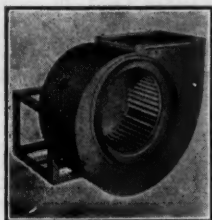
**Now we're making  
it HOT for the  
AXIS...**



## Quiet May OIL BURNERS

### YOUR BLOWER Requirements

AVAILABLE AT  
**Schwitzer-Cummins Company**



★ **BLOWERS  
FOR EVERY PURPOSE**  
Double Inlet and Single Inlet

**HY-DUTY** Blowers, 9 $\frac{3}{4}$ " to  
25" • Top and Bottom Horizontal,  
and Top and Bottom Vertical  
Discharge • Top and Bottom

Motor Mounting • Dual Units also available.

★ **CENTER DISC WHEEL**—Double In-  
let, Double Width • Reinforced Center  
Disc • Designed for Modern Air Con-  
ditioning and Heating Applications  
• Sizes, 4 $\frac{1}{2}$ " to 50".



★ **ENGINEERING DATA**—Write for Catalogues show-  
ing complete Performance Data • Experienced Engi-  
neering Department available to help solve your Air  
Handling Problems.

BLOWER DIVISION  
**SCHWITZER-CUMMINS COMPANY**  
1145 EAST 22ND STREET INDIANAPOLIS, U. S. A.

## 3 TYPES OF ALLEN Turbine Ventilators for 3 Important Jobs!

1. **Coni-Vane.** The famous  
"Free Air" Allen Ventilator which  
gives cost-free powerful suction,  
and is the standard installation for  
most ventilating jobs.

2. **Electro-Wind.** Air plus  
power. The same Coni-Vane ven-  
tilator, with auxiliary electric power  
available to double the exhaust at  
a trip of the switch.

3. **Type "C".** The vane-less Allen,  
especially designed for chimney  
jobs or any ventilation project  
where lowest cost is demanded.



Illustrated—Coni-Vane

Our engineering department will assist you if desired. Let us send the latest literature for your files, on these 3 types of Turbine Ventilators, and also the many other types of Allen Ventilating equipment for varied industrial uses.

**The ALLEN Corporation**  
9752 ERWIN AVENUE DETROIT, MICH.

### "Alnor" VELOMETER



Direct Reading Air  
Velocity Meter

"Alnor" Velometer fills the  
need for a simple, accurate  
means of determining air  
velocity in air conditioning,  
forced air exhaust ducts, etc.  
Peak efficiency operation is  
now more important than ever before...  
and Velometer with its many simple at-  
tachments assures correct readings, under  
the most adverse conditions, in feet per  
minute, right on the scale! These read-  
ings enable you to gauge the system's efficiency and MAKE NECESSARY  
ADJUSTMENTS to assure greatest efficiency.

Write for the NEW CATALOGUE NOW!



**Illinois Testing Laboratories Inc.**

412 N. La Salle St., Chicago, Ill.

### REPAIR PARTS FOR ALL MAKES STILL AVAILABLE



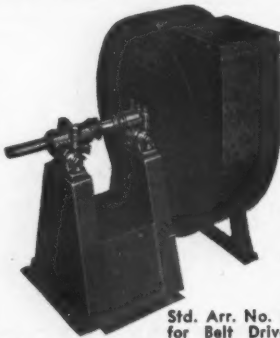
With priorities restricting sales of  
new equipment, repair business is  
more essential than ever. PEER-  
LESS dealers can still depend upon  
prompt deliveries of repair parts  
for ALL MAKES AND AGES of fur-  
naces. Get the repair business  
now and you'll be all set to get the  
new jobs after the war. PEERLESS  
builds warm air heating equipment  
in all sizes, including heavy duty  
units for the largest buildings.  
Write for dealer proposition and  
repair parts catalog.

**PEERLESS FOUNDRY CO., 1853 Ludlow Ave., INDIANAPOLIS**

# RYERSON CERTIFIED STEELS

## 10 STRATEGICALLY - LOCATED PLANTS

Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structural, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes, Mechanical Tubing, Rivets, Bolts, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Cincinnati, Detroit, Cleveland, Buffalo, Boston, Philadelphia, Jersey City.



Std. Arr. No. 1  
for Belt Drive

New and Improved "EX" Fans are now available in standard sizes from No. 15 to No. 80 and from 200 to 30,000 CFM Capacity with pressures up to 15" W.G. These fans are commonly used for exhaust problems to handle dust, fumes, shavings, etc., but can be adapted for forced draft service.

"EX" Fans are furnished in all standard arrangements of the N.A.F.M. The design is such that it can be easily modified to suit special assemblies, thus "EX" Fans are ideal for resale purposes, as part of factory assembled units.

Write us about your problems. Send for Bulletin No. EX-41

**BAYLEY BLOWER COMPANY**  
1817 South 66th Street Milwaukee, Wis.

# BB HOOKS & HANGERS



Wood Bolt

THRU  
LEADING  
JOBBER  
EVERYWHERE



No. 9

**BERGER BROTHERS CO.**

Main Office & Factory  
229-237 Arch St., Philadelphia, Pa.

YESTERDAY

Payneheat  
for the  
homes of  
America.

TODAY

Precision  
parts for  
the arms of  
Democracy.

TOMORROW

Still finer  
furnaces for the  
gas industry's  
post-war  
expansion.

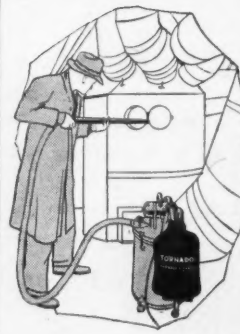
# PAYNEHEAT

Payne FURNACE & SUPPLY CO., INC., BEVERLY HILLS, CALIFORNIA

## TORNADO FURNACE CLEANERS

Are Still in Demand but Are Not Available

UNTIL AFTER THE WAR



The manufacture of TORNADO Furnace and Boiler Cleaners was, as you doubtless know, discontinued some time ago to make way for "essentials," on which our efforts are now concentrated.

After the war, these Cleaners will resume their rightful place not only for cleaning purposes, but for keeping you in touch with the fuel and stoker needs of your customers.

**BREUER ELECTRIC MFG. CO.**  
5082 Ravenswood Ave., Chicago, Ill.

## REPAIR PARTS

for any and all makes of

STOVES—FURNACES—BOILERS

Same Day Shipments

Also **MODERNAIRE** FURNACES

Fittings, Registers, Supplies

# DES MOINES STOVE REPAIR CO.

112 S.W. 2nd

Since 1869

DES MOINES, IOWA

## WISS "METAL-MASTER" SNIPS

(Compound Action)



CUTS LEFT

"TWICE  
THE WORK  
WITH HALF  
THE  
EFFORT"

TWO MATCHED PATTERNS M1 (Cuts Left) M2 (Cuts Right) Cut circles, squares and any irregular patterns on Stainless, Dural and Monel Metals with the greatest of ease. Jaws of wear-resisting Manganese Molybdenum Steel. Handles hot-pressed from tough Chrome Vanadium Steel. Nickel steel bolts and nuts to Government specifications. All parts interchangeable. Detachable rubber handle grips at slight extra cost.

**J. WISS & SONS CO.**

ESTABLISHED 1848

NEWARK, N. J.

## CHICAGO STEEL BRAKE



BEST BY FORTY-TWO YEARS TEST

**DREIS & KRUMP MFG. CO.**  
7404 LOOMIS BLVD. CHICAGO



## Costing Method For Welding Operations

(Continued from page 50)

ductive units in which we are principally interested; and second, "B" units produced as the result of an operation which is not assignable to any single part, structure, or assembly which are known as non-productive units. The latter are produced when an employee cleans up the department, goes to the Tool Room for a tool, punches the time clock, sharpens his file, or some similar operation. These operations are not directly chargeable to any single part but are necessary in the day's work and the employees are given credit for them.

The principal job of the standards clerical department is to compile the total "B" units pro-

DAILY TIME CARD RECAP					
Page No.	DEPT.	MONTH		YEAR	
DAY	ASSIGNABLE	SUB TOTAL T-UNITS EVERY SEVEN DAYS	NON-ASSIGNABLE	SUB TOTAL T-UNITS EVERY SEVEN DAYS	P.D.W. HRS.
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
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30					
31					
TOTAL ASSIGNABLE =			TOTAL NON-ASSIGNABLE =		
TOTAL P.D.W. HRS. = 50 =					

NOTE: Tabulators place "Sub-Total" in Blue and "Grand Total" in Red.

Exhibit 4—The shop requires a daily recap of productive B-Units so this form is used to accumulate units for further segregation for cost purposes.

duced in order to arrive at the employee's index and to compute the premium due. The shop employees are paid for the total "B" units produced, but from a cost viewpoint only the productive "B" units are of interest. These are accumulated daily at the same time that the total units are compiled. Exhibit 4 is a form used to compile the units so that productive units can be easily segregated for cost purposes.

The units for each department are summarized on another card (Exhibit 5) which is designed to show the total productive "B" units produced on standards in that department during the month. Cards for all departments when totaled indicate the "B" units produced in the entire plant for



For nearly 50 years ALLEN Fluxes and Soders have been tops in their field. Pains-taking Technical Research . . . endless tests on metals and alloys of every description . . . is back of every ALLEN Product. If you have a special soldering problem—send us the details. We'll be glad to help.



**L. B. ALLEN CO., Inc.**  
6702 BRYN MAWR AVE., — CHICAGO

Write for  
Catalog and  
Prices

**SPEED UP ORDERS**  
with a  
**BEVERLY SHEAR**

Throatless shears that cut any shape . . . straight, round or irregular. **FASTER**—no distortion! Precision—accuracy! Order No. 1 for 14 gauge. No. 2 for 10 gauge. No. 3 for 3/16 inch mild steel and 10 gauge stainless.

**BEVERLY SHEAR CO.**  
3008 W. 110th Pl., Dept. 1  
CHICAGO, ILL.

## AXIOM AIR FILTER

The result of fifteen years experience  
Lower in cost — Higher in quality  
Huge dust capacity—low resistance  
Prompt delivery assured  
Order now

**BLOCKSOM & COMPANY, MICHIGAN CITY, INDIANA**

# Repair parts

**FOR ALL  
HEATING UNITS**

**A. G. BRAUER SUPPLY CO.**  
*Distributors of All Heating and  
Air Conditioning Equipment*

**2100 Washington Ave. St. Louis, Mo.**

# ★ War Time Trade News ★

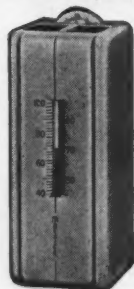
## RUGGED CONSTRUCTION SIMPLE OPERATION

### MASTER HEAT REGULATOR

TYPE A-23 Positive snap action—  
operates quietly, surely and safely.

**WHITE MFG. CO.**

2368 University Ave., St. Paul, Minn.



## GILCO

*Automatic*

FURNACES and WATER HEATERS



**J. L. GILLEN CO.**

DOWAGIAC • MICH.

## Syncromatic

T. M. REG.

**COAL OIL  
AND  
GRAVITY FORCED AIR  
STEEL FURNACES**

3373 NO. HOLTON ST., MILWAUKEE, WIS.

## ECON-O-COL the "Stronghearted" STOKER

ECON-O-COL  
Automatic  
COAL BURNER

ECON-O-COL STOKER DIVISION  
COTTA TRANSMISSION CORP.  
ROCKFORD ILLINOIS



THE SHIELD OF QUALITY

Joseph T. Ryerson & Son, Inc., 16th and Rockwell Sts., Chicago, publishes a "Ryerson War Bulletin" in the interests of all workers—on the production front and in the armed forces of the nation. The January 1, 1943, issue has 16 pages, 7x12 in., with a roll of honor on the center spread containing 371 names, two of whom have lost their lives. There are pictures and stories of Ryerson men in service, service men news, and a story of the 100th anniversary of the company, as well as a reproduced Western Union Thanksgiving day message from General Eisenhower, commander in chief of the American forces in North Africa, which reads, "On this Thanksgiving Day, let us thank God for the American industry labor and management which has given us the weapons and the equipment with which to conduct our North African campaign. More power to you."

Ralph Fern of Scranton, Pennsylvania, is manufacturing Klondike electric arc welders and pipe thawers for army engineers to about 90 per cent of the present business. A recent addition has been made to the plant. Employees are purchasing 10% of their wages in war bonds.

Clarage Fan Co., Kalamazoo, Mich., reports many Army, Navy and Maritime Commission contracts for their regular lines. All business consists of war orders.

The following are in service:

Wm. Bradfield—Lieutenant, Sr. grade, Navy—formerly salesman, Kalamazoo.  
John Trescott, Lt. Col. Engineers—formerly sales representative, Charlotte, N. C.  
Ray Neff—1st Lt. Anti-Aircraft in Australia—formerly Air Conditioning Department.  
Chas. Fury—1st Lt. Ordnance Dept., Indiana Ordnance Works—formerly Southern District Sales Manager.  
Wendall Zieloff—2nd Lt. Signal Corps—formerly Research Department.  
Earl Brown—2nd Lt. Tank Corps—formerly Estimating Department.  
William Williams—Ensign Navy—formerly Estimating Department.  
Wm. Appeldoorn—Ordnance Dept.—formerly salesman, Philadelphia.  
Wm. Hoover—2nd Lt. Engineers—formerly salesman, Washington.  
Joe Quinn—War Production Board—formerly salesman, Washington.  
Geo. Pharo—War Production Board—formerly salesman, Chicago.

The Black & Decker Mfg. Co., Towson, Maryland, reports 178 of their salesmen, engineers and executives have entered Army, Navy, Marine or Government service.

The company has won the 10 per cent Certificate and flies the Minute Man T flag for the purchase of war bonds.

Several former employees have seen service.

Employees have won the Army-Navy E for presentation on February 11.—J. F. Apsey, Jr.

L. J. Mueller Furnace Company, Milwaukee, Wisconsin, was awarded the Army Ordnance banner on December 17 in recognition of the excellent record which has been achieved by the company in the production of Ordnance material.

The presentation was made by Major Frank Parker of the Chicago Ordnance District, and the banner was accepted on behalf of the employees by Miss Dorothy Johnson, oldest girl employee in point of service, and Ray Skorch. The address of welcome was given by Harold P. Mueller, President, who told of converting from peacetime to war production.

Frank J. Nunlist, representing Mueller's War Contract Division, was master of ceremonies for the presentation program. In the evening, the company was host to a large number of guests at a dinner at the Plankinton Hotel.

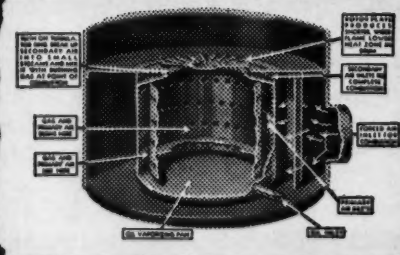
The Hotstream Heater Co., 8007 Grand Avenue, Cleveland, reports that in view of limitation order L-185, all facilities for manufacturing water heaters will be devoted to their manufacture for the Army, Navy, Maritime Commission, National Housing Agency, and the War Shipping Administration. They have been allocated material for the manufacture of draft models B and BM, and are now able to sell them without a priority when they are used for the purpose of fuel conservation.

O. A. Reiter, formerly sales promotion manager, has been connected with the War Production Board in Cleveland for some time.

Famous Patented *Monogram* Vaporizing Burner  
Provides Highest Known Operating Efficiency with Oil

Full Forced  
Winter Air  
Conditioners

Booster  
Gravity  
Units



Utility  
Room  
Units

Automatic  
Water  
Heaters

The QUINCY STOVE MFG. COMPANY, Quincy, Illinois

Buffalo F... has been pro... Navy "E." commander York Militar Robert S. Rear Admi USN retired Chairman President E Vice Preside the pennant

Owens-Co... poration, To... 48-page broc... as a perma... "E" awards... a broad gene... pany's contr... fort. There... awards to F... ton, R. I., a

The filters... transfusion... on the battl... civilians are... "Fiberglas."

A thin she... a retainer m... making mat... a battery lo... stronger, ste

Fiberglas... flagging war... chute flares... insulation, a... and Navy eq

Uno Ven... Mass., repor... year or two... shipments ha... Army, Air C... mission, syn... octane refine... is on AA pri

Individuals... have been co... bonds. Seve... now in servi

Arnold E... head of the g... division of th... well Regula... eastern zone... Army Air... servicing fli... duced by Min



# ★ War Time Trade News ★

Buffalo Forge Company, Buffalo, has been presented with the Army-Navy "E." Col. John M. McDowell, commander of the Western New York Military District, Commander Robert S. Smith, U. S. N., and Rear Admiral Wat T. Cluveris, USN retired, were in attendance.

Chairman Henry W. Wendt, President Edgar F. Wendt; and Vice President A. Booth accepted the pennant.

Owens-Corning Fiberglas Corporation, Toledo, is distributing a 48-page brochures to all employees as a permanent memento of the "E" awards. The brochure gives a broad general picture of the company's contribution to the war effort. There is a story of "E" awards to Fiberglas plants at Ash-ton, R. I., and Newark, O.

The filters in the portable plasma transfusion kits used by soldiers on the battle fronts and also for civilians are made of tightly woven "Fiberglas."

A thin sheet of Fiberglas, called a retainer mat, retains the juice-making material on the plates of a battery longer . . . to give a stronger, steadier flow of power.

Fiberglas is also used in camouflaging war-industry plants, parachute flares, electric motors, ship insulation, and models of Army and Navy equipment.

Uno Ventilator Co., Saugus, Mass., reports that for the last year or two fully 90 per cent of shipments have been to the Navy, Army, Air Corps, Maritime Commission, synthetic rubber plants, octane refineries, etc. All business is on AA priorities.

Individuals and the corporation have been consistent buyers of war bonds. Several former employees now in service has seen action.

Arnold E. Peterson, formerly head of the gas heating equipment division of the Minneapolis-Honeywell Regulator Company in the eastern zone, is now instructing Army Air Force personnel and servicing flight equipment produced by Minneapolis-Honeywell.

American Furnace & Foundry Co., Milan, Michigan, reports approximately 80 per cent prime or sub-contract cast iron hot water heaters and machine tool castings. Their employees are purchasing war bonds under the payroll deduction plan. The company is soliciting all prime and sub-contract work possible.

Clyde Thompkins of the Reynolds Electric Company, Chicago, reports that the company has contracts from all armed force branches for Reco food mixers, vegetable peelers, refrigerator fans, circulating fans, motor driven controls, thermal flashers and controls, fractional hp motors and color hoods.

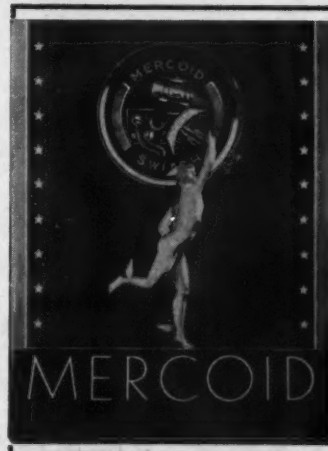
Present business consists of 100 per cent war orders, less a small amount of repair parts for users of Reco equipment. The company and employees are purchasing war bonds by about 95 per cent.

The company is working on a plan to accept orders now for post war delivery on receipt of a war bond as deposit and first payment, the remainder to be paid when equipment is delivered. It is hoped that this plan will give a backlog of orders so it can change from war orders to civilian orders without suspension of production facilities or layoff of employees.

Doyle Vacuum Cleaner Co., Grand Rapids, Michigan—Dewey I. Doyle, president—reports his son Dewey I. Doyle, Jr., age 20, deferred by the draft board to continue his fourth year engineering studies at the University of Michigan. He enlisted in the air corps and was assigned as an aviation cadet to study meteorology at New York University.

The company is engaged in war work. Employees are purchasing war bonds under the 10 per cent club plan.

Captain M. G. "Robbie" Robertson, 26th Airways Detachment, is now at Indiantown Gap. He was formerly manager of the New York Branch, Milcor Steel Company.



THE MERCOID CATALOG IS A GOOD REFERENCE BOOK WHEN IN NEED OF AUTOMATIC CONTROLS. A COPY WILL BE SENT UPON REQUEST.

THE MERCOID CORPORATION  
4209 Belmont Avenue  
CHICAGO, ILL.



**Leader**  
**KOOLSTACK FURNACES**

**FOR STOKERS**

**OIL or HANDFIRED**

50,000 to 200,000 BTU's

Patented Damper  
Uses All the Heat  
in the Added Heating Surface

THAT  
IS SOMETHING  
TO SELL

LEADER IRON WORKS, Inc.  
Decatur Illinois

**SPOT WELD**

WITH AN

**ACME "Hot Spot" WELDER**

Proven utility for over 26 years in thousands of sheet metal fabricating plants.

Write for Literature and Prices.

Complete Range of Sizes

Lifetime Guarantee!

ACME ELECTRIC WELDER CO.  
2618B Fruitland Road Los Angeles, Calif.



**CHOOSE:**

**BONDS or BONDAGE**

Buy U. S. War Bonds

With manufacturing facilities converted 100% to War Production, our research department is devoted to designing improved units to be added after V day to the complete CONCO line.

**CONCO**

CORPORATION  
Div. of H. D. Conkey & Co.  
MENDOTA, ILLINOIS



**NIAGARA**  
**FURNACES**

AND

**FORCED WARM AIR HEATING EQUIPMENT**  
for REPLACEMENT . . . for DEFENSE HOUSING

A dependable line of Gravity and Forced Warm Air Furnaces to carry you through the duration.

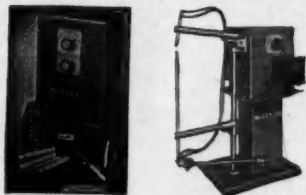
THE FOREST CITY FOUNDRIES COMPANY  
2500 W. 27th Street Cleveland, Ohio





# AMERICAN ARTISAN Service Section

## WELDING HEADQUARTERS



Electric welding equipment of every description to weld from a watch case to a door. Special or standard SPOT WELDERS from 1/4 to 500 K.V.A. A.C. Arc Welders from 100 to 400 Amps. We invite contract Spot Welding in large or small quantities.

**EISLER ENGINEERING CO.**

CHAS. EISLER

761 S. 19th St. (Near Ave. Ave.) Newark, N. J.

## Alphil Spot Welders

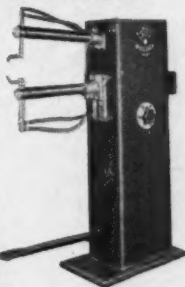
More Production—Lower Cost

used in leading Aircraft Industries and many other Government plants.

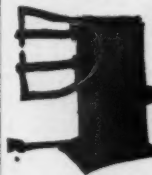
Welders built for both foot and air operation. Rocker Arm, Press Type, Lower Adjustable Arm, Straight Up and Down, also Swivel Type.

Problems? Consult Us For literature and prices write to Dep't A.F.

Alp Spot Welding Co.  
431 W. Broadway, N.Y., N.Y.



## SPOT WELDERS CUT COSTS



Ideal for Sheet Metal Shops, Speeds Production, Constant Economical Service.

Floor Type Foot Operated

Write now for full information on our complete line. Quick deliveries.

**UNIVERSAL POWER CORP.**  
4298 Euclid Ave. Cleveland, O.



Save Money, Time and Muscle

Drill Concrete with the "Do-All" Combination Electric Hammer and Drill. Set expansion bolts 10 to 20 times faster than with hand tools. Drills concrete, brick, stone, metal, wood. Easy to maintain. Weighs 15 lbs. Drills to 1 1/2" in concrete. 2400 blows per min. Bulletin 400. Phone Austin 9866.

**WODACK ELECTRIC TOOL CORPORATION**  
4644 W. Huron St., Chicago, Ill.

## Classified

### FOR SALE

FOR SALE: Five Home Comfort Steel Furnaces manufactured by the Wrought Iron Range Co., St. Louis. (Thirty Inch Fire Pot.) Used about 30 days. Very reasonable price. Address: H. H. Bain Roofing Co., Inc., Shreveport, Louisiana.

FOR SALE: 1 Sturtevant Ventilating Fan. Blower Wheel 8 ft. diameter; Frame approximately 10 ft. diameter. 4"x4" Exhaust Opening. Address: H. H. Bain Roofing Co., Inc., Shreveport, Louisiana.

1—10 ft. 8 gauge capacity Loy & Nawrath electric power shear complete with motor in fine condition. Make offer.  
Also 4 ft. Dries-Krump Chicago power brake, 8 gauge capacity. Make offer.  
Parker Roofing Company, 1627 Third Ave., South, St. Petersburg, Florida.

### SITUATIONS OPEN

WANTED: An experienced factory representative to work with manufacturer's sales representatives in calling on heating and ventilating supply jobbers, dealers and industrial users. Give age, years of experience, lines you have sold and references. Address Key No. 564, American Artisan, 6 No. Michigan Ave., Chicago, Ill.

WANTED—Several Sheet Metal Workers for layout work, assemblies and erectors for general job work on duct and blow pipe work in northern Ohio city. If employed on essential war work do not apply. State age, race, experience, abilities and physical condition. Address Key No. 563, American Artisan, 6 No. Michigan Ave., Chicago, Ill.

## Have You Something to Sell?

or . . . . .

## DO YOU NEED ADDITIONAL EQUIPMENT?

In this day of all-out war effort many plants are seeking equipment that may be standing idle in other shops. If you need equipment, American Artisan classified section will put your desires before the logical people to supply it. If you have something to sell—American Artisan Service Section will put your advertisement before many prospective buyers. In the Warm Air and Air Conditioning Industry American Artisan is "Tops" in reader interest. Your products advertised in these columns will bring many inquiries and result in many sales.

## PROMPT SHIPMENT FROM STOCK

### APRON BRAKES

POWER: 10'10 ga. 8'10 ga. 4'1/4";  
HAND: 10'16, 8'12, 8'14, 8'16, 8'18, 6'18;  
BOX & PAN: 8'10 ga. 7'14; 4'14, 5'14;

### PRESS BRAKES

D&K: 10'3/16"; 6'14 ga.; 10' POORMAN;  
OHL: 10' 14 ga.; 4'16 ga.; 5'14, 6'14 ga.;

### FLOOR LATHES

30' PIT LATHE; 156" face plate;  
38"x20" New Haven; 26"x18" DRAPER;  
20"x8' & 16"x8' MONARCH;

### MISCELLANEOUS ITEMS

No. 2-48 CINCINNATI 2 SP. VERT.  
BROACH; With motors; New 1937;  
No. 2 1/2 B KEARNEY TRECKER VERTICAL MILL;  
Nos. 2-B & 3 MANVILLE THREAD  
ROLLERS; 1/2" capacity;  
1/2" & 3/4" SHUSTER WIRE STRAIGHTENERS; 24 & 30 Ft. cutoffs.

## INTERSTATE MACHINERY CO., INC. — YARDS 5800

1433 W. PERSHING RD., CHICAGO, ILL.

### OBII PRESSES

Nos. 5 CONS. & BLISS, No. C5 FERR;  
Nos. 5 & 4 TOLEDO; No. 4-S ROBINSON;  
No. 3 CONSOLIDATED; No. 2 WALSH;

### DOUBLE CRANK PRESSES

No. 3-C BLISS, 5-1/2" stroke; 58 1/2" bet.;  
No. 4-80 W&W 10" stroke; 4" shaft;  
No. 91-C TOLEDO; 6" stroke; 42 1/2" bet.;  
No. 91-B TOLEDO; 6" stroke; 32 1/2" bet.;

### POWER ROLLS

7 1/2 FT. 10 ga.; 36"x4'; 8' 20 ga. NIA;  
ANGLE: 6x6x 3/4" WICKES; M.D.;

### SPOT WELDER

250 KVA FEDERAL PRESS TYPE PROJECTION; Toggle movement of ram; 60 c. 440 v.;  
55 KVA SWIFT BUTT WELDER;  
25 KVA THOMPSON SEAM WELDER.

**SERVICE SECTION:** Rates for display space similar to above in Service Section are \$5.00 per inch per insertion. One-inch minimum space accepted. **Classified Section:** Rates for classified advertising are 5 cents for each word including heading and address. Count seven words for keyed address. Minimum \$1.00 for each insertion. Cash must accompany order.

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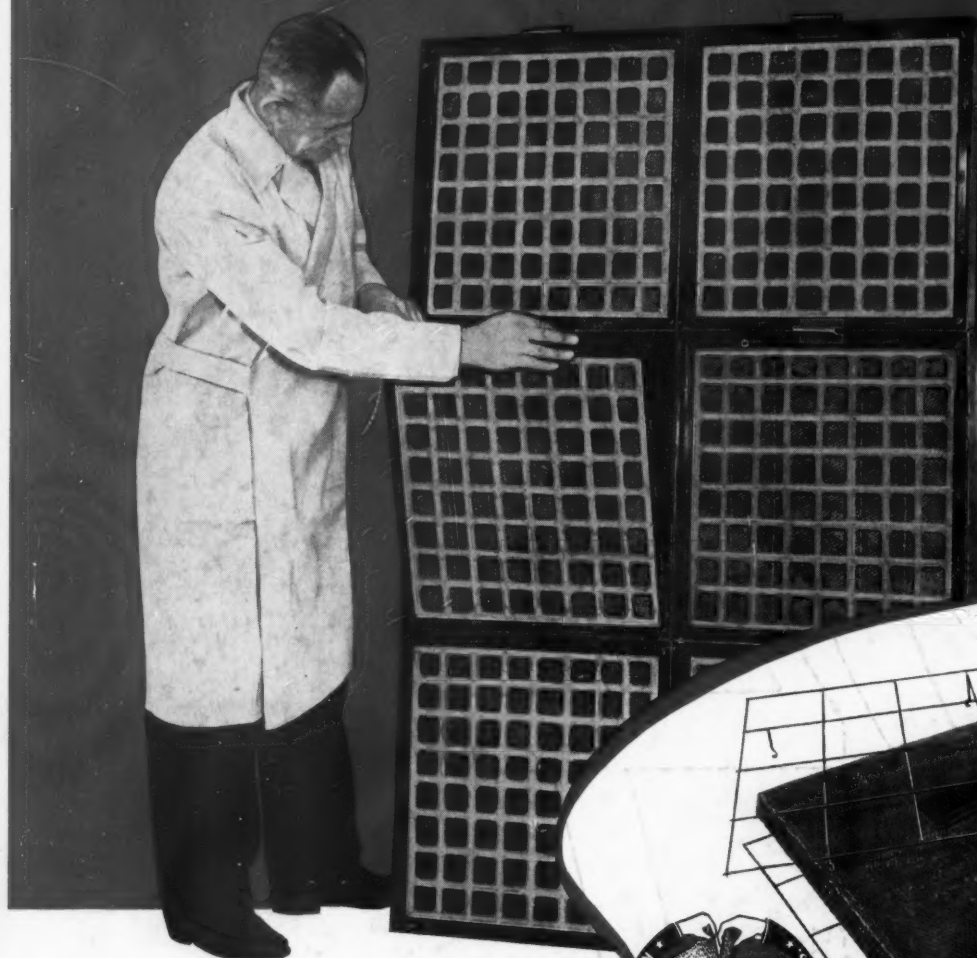
# 194?

*We'll be ready*

SIDE BY SIDE in the plants of Minneapolis-Honeywell and its subsidiary, The Brown Instrument Company of Philadelphia, control research for war and control research for peace go on twenty-four hours a day. Our present job is to provide the nation with the necessary equipment for combat, for military and defense housing and for essential war industry. Out of this experience are coming developments in automatic controls for American industry and American homes that

will provide an effortless, scientific comfort and efficiency, for post-war living and working. To all who own or sell heating and air conditioning equipment, or who use industrial instruments, we say: "M-H and Brown Engineers are building, every day, every hour, for the war and for the future." Minneapolis-Honeywell Regulator Co., 2726 Fourth Ave. S., Minneapolis, Minn. In Canada: Toronto, Ontario. In Europe: London, England and Stockholm, Sweden.

**MINNEAPOLIS-HONEYWELL**  
CONTROL *Systems*



### Research Air Filters Are Easily Changed

Illustration at left shows how easily Research Air Filters are changed. Also used in "V" type filters which permit more filter area in small space.

## Send for Our New Data Sheets on Research Filter Banks

Gives detailed directions for installing Research Air Filter Banks, both flat and "V" type, also methods of determining type and sizes. Research Filters are especially efficient in filter banks because they afford 25 square feet of dust holding surface for every square foot of frontal area.

By official A.S.H.V.E. tests Research Filters are 91% efficient.



"No. 200 Series"

## RiP-Clean RESEARCH AIR FILTERS with the Self-Seal Edge

**H**ERE'S the filter that is used by leading manufacturers as standard equipment in forced air and air conditioning systems . . . in homes, office buildings, factories, stores, theatres. The "No. 200 Series" holds the filter pad between wire grids, with an oversized edge to hold tight and prevent unfiltered leakage of air.



### RiP-Cleaning Triples Filter Life

When the filter pad becomes clogged with lint and dirt, it is removed from the grids, the two top layers are rolled off, regaining its original high efficiency. This may be repeated 5 times before it is replaced with a new filter pad.

# RESEARCH PRODUCTS CORPORATION

Dept. 2

Madison, Wisconsin